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A program to teach behavioral analysis principles and applications to parents and other caretakers of disturbing children (normal, retarded, neurotic, psychotic, and others) was developed while serving 50 families. A nine-family study was then done comparing three 12-week treatments (minimum contact 1, nonoperant 1, and operant 1) in terms of therapeutic process and outcome. A second 12-week treatment period 3 weeks after the first was designed, in part, to offer operant 2 to the six families who had not received operant in treatment period 1. Three measurement periods occurred: one before treatment 1, one after treatment 1, and another after treatment 2. Process data were collected during all treatment periods; and outcome data, based on objective ratings of videotapes of parent-child interactions and parents' psychological test performances were collected during all measurement periods. Children in all groups improved in general behavior categories and in specific-to-each family categories. Operant groups seemed better but there were not enough cases for statistical significance. The psychological tests of the six operant-only parent pairs improved more than did the three nonoperant-then-operant parent pairs. Recommendations for further research and applications are presented. (Author/JD)

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FINAL REPORT
Project No. III
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TEACHING PARENTS AND OTHERS PRINCIPLES OF BEHAVIORAL CONTROL FOR MODIFYING THE BEHAVIOR OF CHILDREN

December 1968

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HEALTH, EDUCATION, AND WELFARE

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Final Report
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Teaching Parents and Others Principles of Behavioral Control for Modifying the Behavior of Children

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in collaboration with

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December 15, 1968

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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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Bureau of Research

Table of Contents

Page

Summary 1

Introduction 2

Statement of broad goals 2

Specific target groups and methods 3

Background of this work 3

Historical development of the method 6

Successive approximations to the present method 8

Methods 13

Some general comments about subjects, procedures, measures, and design 13

Apparatus 15

Selection of client subjects 15

Measurement Period I and some preliminaries to the treatment 16

Treatment Period I 19

Measurement Period II 49

Treatment Period II 50

A process study of operant and non-operant parent consultation by Frank C. Warman 67

A case report of non-operant I then operant II treatments for family B. 105

The rating of video tape recordings of parent-child interactinns 125

A behavioral evaluation of parent-child interaction from video tape recordings by Donald M. Baer and William H. Merigan 137

Evaluation of psychological testing of the nine pairs of parents by Evelyn F. Hill 166

Page

Conclusions and Recommendations 183

References 185

Appendices 190

Tables*

1. The Design of 1967-1968 Therapeutic Study 13

2. Ratings of 40-Minute Video Tapes - Family G 39

3. Ratings of 40-Minute Video Tapes - Family B 124

4. Behaviors counted and timed by staff video tape raters 128

5. Video tape ratings of all nine families (A through I) 212

Figures*

1. Ratings from audio tape recordings of relevant verbal behavior in an early group and in the last operant group 61

2. Score of each parent on vignette questions 62

3. Cumulative record of times child S. climbed onto table top during meal times 64

4. Percent of incorrect responses in a verbal discrimination task 121

* Note: Tables and figures in the papers by Warman, Baer & Merigan and Hill are not listed here. They follow their own numbering system.

Preface

This final report on the development of a form of operant-oriented family counseling cannot be viewed as final. In the world of R & D as applied to behavioral problems, it is hard to find either the beginning or the end. This enterprise began for me with support from the Ben W. Murch Home and School Association and Miriam Kaufman, Principal and Director. The earlier parts of our work owe much to C. B. Ferster who gave aid and encouragement to this clinical enterprise. His continued interest and good ideas have improved our work in many respects. He and his co-author Mary Carol (Perrott) Boren taught me and my early colleagues much through their writings (e.g., early drafts of Ferster and Perrott, 1968) and through their counsel.

My colleagues have been helpful and numerous. The first to sit beside me in this work were Shlomo I. Cohen, Dennis E. Breiter and James A. Forbes. They gave many ideas and much effort. Also of great help was the late Paul Daston whose untimely death ended an association that helped me more than I can say. Others who contributed much are Stanley Pavey and Frank Warman. Sections of this report are based on writings by David Orme-Johnson, Gilbert Zatkin, and Richard Switalski. A major data gatherer and valuable office manager was Artha Hoffarth. Thomas M. Magoon was a fine host (and landlord) during our work at the Counseling Center of the University of Maryland.

I wish to thank Linwood Childrens Center and Miss Jeanne Simons, the National Society for Autistic Children, Prince George's County Board of Education and the Washington Post for their cooperation in referring subjects. I hope we gave at least a little help to the subject families and to their children in exchange for their patience as we learned.

This report is specifically dedicated to our friend and colleague Paul G. Daston who died suddenly during this study. He was a man of honesty, good humor, diligence, and responsibility. We, his colleagues, and the people he served remember him with pleasure and appreciation. We assure the reader that this report would be better written if Paul's fine sense of language were still with us.

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Summary

This report describes the development of an operant-oriented form of family therapy for parents of disturbing children. It reports on work done from September 1964 to August 1968, a four-year period. During this time about 50 families (of normal, retarded, neurotic, psychotic, etc. children) have been treated. Progressively, techniques have evolved, staff has been trained, and measurements have been obtained. These techniques include (1) group educational meetings in which principles and applications of behavioral analysis have been taught to parents and (2) individual consultation sessions with these same parents in which techniques specifically appropriate to each family are suggested. Therapeutic home visits are a regular part of this procedure. The overall goal is to teach the parents how to make functional analyses of their child's behavior so that they can help the child to be less disturbing. We take responsibility for the parents' behavior by controlling reinforcers such as the parents' money. We also attempt to train and control the therapeutic staff. A study of nine families was designed primarily to further develop procedures and secondarily to obtain more objective and comprehensive outcome data. In order to assess the procedures and effects of a 12-week treatment program, a variety of measures were obtained. Therapeutic process was audio recorded and in three non-therapeutic measurement periods video tapes were taken of parent-child interactions in natural (home) and contrived (our office) environments, and psychological tests were administered to the parents. We have presented step-by-step procedural descriptions of the therapeutic process. We have also developed a system for describing the process more quantitatively.

Our results have been encouraging. Objective ratings of the tapes and of the psychological tests support our more subjective views of positive results. Less systematic follow up data after three years suggest that the results of this approach are durable. The approach deserves more development. We still find parts of the details of procedure to improve. Replication of this study and application of its method must wait for the establishment of training programs for more professional workers. However, the behavioral approach while being anti-mind seems very pro-human.

Introduction

This is a final report of work carried out under Grant No. 32-30-7515-5024 from the U. S. Office of Education to Leopold O. Walder, Principal Investigator, and administered by the Institute for Behavioral Research, Inc., 2429 Linden Lane, Silver Spring, Maryland 20910.

The overall effort of this work was to help child-care personnel, especially parents of disturbing children by teaching them behavioral analysis techniques. The general approach involved objective description of the methods to allow others to attempt the same approach and evaluation of the outputs from this approach to determine if it is worthy of being used. We have used a successive approximations strategy similar to research and development engineering enterprises. Each successive approximation was designed to improve upon the output of the preceding.

In this report we include our major work with parents of disturbing children at home (Project A). Project C which deals with parents of disturbing children in a classroom setting was described in detail in an interim report by Roger W. McIntire; his interim report preceded this final report. Three Ph.D. dissertations (Hirsch, 1967; Breiter, 1968; and Berkowitz, 1968; from Project A), all done in the Department of Psychology, University of Maryland, were part of the yield of the Project A research.

Statement of Broad Goals

The major emphasis of our work was the development of educational techniques appropriate to a specific student population, the community caretakers of disturbing children. Both the content and the methodology of our educational program were based on the principles of behavioral analysis as outlined by a number of authors (e.g., Holland and Skinner, 1961; Reese, 1966; Ferster and Perrott, 1968). The program we intended to develop, describe, evaluate and improve was designed to serve two major functions for the child-care students:

1. To provide the student with an understanding of the theoretical tenets of behavioral analysis through lectures, films, group discussions, readings and assignments in programmed texts.

2. To provide the student with a supervised practicum experience in the application of operant techniques to modify the disturbing behavior of the child under the student's care.

It is important to state at the outset that although our program resembled in some aspects a clinical service, it was not intended as a comprehensive treatment proper. Although we expected the children served by us to improve along a number of important behavioral dimensions, this was seen as an important by-product but not the major goal of our work. Our major goals were to familiarize our students with an approach to behavior modification, to provide an initial experience in its application and hopefully to encourage the long term application required to modify the behavior of their severely disturbing children.

In spite of the above disclaimer we have taken our clinical obligations seriously. We had designed the study so that the parent-students would give us data in exchange for responsible clinical service. We are indeed pleased that our information, both hard and soft, about our subject families is that we probably served them well.

Another major goal for any educational program is that our students (the parents) will continue their studies, will apply what they have learned, and will establish related programs of their own. We attach a recent newspaper article describing such a development by one of our 50 families. (See the December 7, 1968, Washington Post article attached at the end of this report.)

In summary, our major goals have been to develop, describe, evaluate, improve, and disseminate an educational program which teaches child care students (parents and others) behavioral analysis principles and techniques.

Specific Target Groups and Methods

Our major target group was the parents of disturbing children. We also worked with teachers in one project (Project C by McIntire) and with profoundly retarded children (a doctoral dissertation by Berkowitz supported by Project A) in another instance. In dealing with parents, we incorporated a number of operant techniques with our methodology in order to maximize parents' participation. We shall describe in more detail in the Methods section how we control the parents' reinforcers (e.g., their money) and how we attempted to insure parental success by asking for small bits of behavioral change at a time. Our primary medium of communication with parents was a weekly meeting divided into group discussion and individual consultation. Group size was one variable we evaluated (in a doctoral dissertation by Hirsch supported by Project A). We also investigated the effect of an intensive and direct intervention of a staff member into the home environment of two seriously disturbing children (in a doctoral dissertation by Breiter supported by Project A). Our major efforts to evaluate the effectiveness of our methods however, came in the form of process and outcome research conducted in conjunction with a 35-week program conducted in the final year of the project.

Process research was designed to describe interactions of the parent and his behavioral consultants. The purpose of the process research was to supplement the verbal description of our methodology with a quantitative description generated by observers unfamiliar with the goals of the study and hence less likely to be biased. (Thus far we have developed a systen of process analysis relevant to the purposes outlined above. Further work is required to apply this measurement system post-hoc to the audio tapes generated from the Parent Project.)

Outcome research was designed specifically to evaluate changes in the quality of parent-child interactions as well as parent psychological test performance.

In this report we shall proceed shortly to present the background of this work. The background stems from John B. Watson's behaviorism, a progeny of Charles Darwin's evolutionary ideas, and from the experimental psychology of learning. We shall present examples of successive changes in our methods each designed to further develop and improve the program. This work involved about 40 families and has been described before (Walder, et al., 1967 & 1968).

We then present in the Methods section a systematic, comparative, therapy study involving nine new families. The prime purpose of the study was to further develop and describe the method. The development and description are presented in the Methods section. Secondarily we were interested in evaluation. Also presented in the Methods section are papers presenting subjective (our staff case reports) and objective (reports by "blind" experts) data which attempt to evaluate the outcome of this therapeutic program. It will be noted that the outcome evaluations by outsider Baer (rating pre- and post-therapy video tapes of parent-child interactions) and by outsider Hill (rating pre- and post-therapy psychological test performances of the parents) look for broad gauge changes in our subjects while evaluations by our inside (but still "blind") tape raters look for changes which are relevant to either the parents' or the therapist's interests.

Background of this Work

The parent in this society is typically the child's first behavioral engineer. While we have dealt primarily with parents who were disturbed by their child's behavioral development, we believe that our approach is appropriate to all parents. In fact we would expect that if people were taught behavioral principles before they became parents and if consultation were available before grave child rearing problems appeared, then our approach would be not only therapeutic but also preventive.

It is reasonable to believe that those who are given responsibility for a job ought to be given access to the technical information relevant to that job. Parents, in this case, have the responsibility for guiding the behavioral development of their children. It would seem reasonable that they be given information about behavior control. This report presents attempts to change the child management techniques of parents who have responsibility for their disturbing children.

Typically parents have not been informed about behavioral principles, and consultation for those in trouble has generally not been available. The parents with whom we have worked had become enmeshed with their children in mutually debilitating and aversive relationships. When the parents had sought professional help, they and their children were offered a treatment which searched for underlying negative motivations (rather than one that offered technical information to give the parents the competence they needed to handle the problem). If, perchance, improvement did not accompany the treatment, they and/or their children were awarded diagnostic labels. This diagnostic labelling seemed often to serve two major purposes: (1) the problem behavior was attributed to the unhelped person himself (i.e., to his defective personality) and (2) the profession's inability to bring about improvement in the parents' and/or child's behaviors was attributed to the "patient's illness" rather than to the profession's lack of ability.

We appreciate Szasz's (1961) view that the behavioral difficulties often referred to as mental illness (or lack of mental health) may be more usefully and ethically considered problems of living. Among reasons for avoiding terms such as *mental health* and *mental illness* is the possibility that they tend to turn the investigator's gaze toward within-the-body physiological, individual difference, and intrapsychic variables and thus divert him from the study of organism-environment relations.

The organism-environment relation may be viewed as the basic datum of psychology. That which we call *behavior* is the change brought about by an organism upon his environment. One of the most useful effects of the organism for psychology is the reliable measurement of its behavior (impact upon a part of the environment so constructed that we are willing to call it a good observer or measuring device). Thus even behavior which is loosely believed to be a feature of the organism is more strictly an organism-environment interaction. This quick analysis of the subject matter of psychology is not meant to be a course in the philosophy of psychology. Rather we want to clarify our position enough to let the reader be clear about what we present. We present an approach which stems from Watson's behaviorism. We, like Watson and many of his successors, are pleased that behavioral psychology is not only scientifically objective but also clinically useful in solving some vexing human problems. The Watsonian tradition, while it seems to some to throw out the baby, has been useful to babies as well as to older persons who have run into troubles.

Behaviorists have long been interested in solving human problems. The list begins with Watson (1920) and M. C. Jones (1924) and proceeds with Dunlap (1932) and Fuller (1949), and arrives today with a list too long to include here. (See, e.g., Ulrich, Stachnik and Mabry, 1966.) We behaviorists are not nicer people than our more mentalistic friends. We are just more fortunate to have a system that has effectiveness. (In the Methods section we shall present our own particular application.)

Perhaps the effectiveness stems from the simplifying Darwinian assumption that the behaviors of all animals generally follow one set of laws. Another simplifying assumption is Freud's; he stated that the normal and abnormal behaviors of humans follow a single set of laws. We behaviorists tend to adopt, like Watson, the available laws provided by the experimental psychology of learning. It is no surprise to find that the field of behavior modification is based upon laws stemming from

Pavlov (1927) and Thorndike (1911) and refined by Hull (1943) and Skinner (1959). The Darwinian assumption then allows us to use a well documented set of laws based on the behaviors of a variety of animals for changing the behavior of troubled and troubling people.

We also derive from the laboratory an experimenter's role which places upon us the responsibility for the outcome. We have adopted this responsibility in our attempts to develop methods to teach behavior control principles and their application to parents of disturbing children. Over the past three years we have evolved a rather complex set of operations; each change in our techniques was designed to avoid a previous error. These changes in procedure were necessitated by our belief that, if we are to pose as experts, then any lack of success with any one of our clients must be attributed to inadequacy in our techniques. We have not allowed ourselves the all too prevalent luxury of blaming our clients for our own failures. Some examples of ways in which clinical workers blame a client are saying that the client is "uncooperative," "unmotivated," "too stupid," or in some way "unchangeable." Although we have received positive feedback from every family with which we have worked, we have seen inadequacies in our technique which yielded results either too little or too late. We shall give specific examples of the later in the section on successive approximations.

We have operated as clinical psychologists. We are therefore concerned with behaviors which occur in the natural environment. We are devoted to developing, describing, evaluating, and improving techniques which are designed to effect durable changes in such behaviors, that is behaviors which are so constructed that they will be maintained by the natural environment. We have dealt with parents and teachers of disturbing children because it is the parent and the teacher who are responsible for the child's environment. Since we assume that a disturbing child is behaving appropriate to his environment, we attempt to control the parent and/or teacher who is responsible for the child's environment and therefore for the child's disturbing behaviors.

The design of the child, i.e., specifying the behavioral goals to be sought, remains the responsibility of the parent and/or teacher. If it does not violate our own moral code, we take it as our role to help create in the child the behavioral outcome desired by those responsible. We shall later detail how we determine our client's behavioral goals for the child. But first we shall try to trace some major historical trends in the development of this method.

Historical Development of the Method

As was stated above, behavior may be viewed as an interaction between an organism and its environment. A specific interchange (a behavioral unit) has its sources in the remote as well as the more recent past of the organism. A behavioral analysis would assume that one may account for an organism's behavior in terms of its reinforcement history as well as the circumstances in which the specific behaviors occur.

Disturbing behavior may be viewed in the same way. Also as stated above, we agree with Freud and most other students of deviant behavior who have argued that one does not need a new set of laws to account for disturbing behavior. We thus believe that a disturbing child is different from a nondisturbing child in terms of what behaviors he has learned but not in terms of how they were learned. There are a number of studies which directly support this belief (e.g., Lindsley, 1960; Ferster & DeMeyer, 1961; Breiter, 1968).

Our point of departure is that disturbing behavior is a member of a very well studied class of events (i.e., behaviors under respondent and operant control. This provides us with a powerful analytic tool which should therefore yield a powerful therapeutic tool. If one is faced by the problem of changing behavior from disturbing to nondisturbing, he may therefore approach it systematically and with some promise of success. Considerable evidence has been brought forward which supports this contention. (See, e.g., Ullmann & Krasner, 1965.)

The present authors have developed one phase of this approach. A basic sociological fact is that most children, disturbing or not, live in an environment which is the responsibility of their parents and their teachers. Child guidance workers and family therapists have been cognizant of this fact and have involved the child's family along with the child of concern in their change techniques. Freud himself used the parent of a child-patient in his work. Both the child guidance clinic and family therapy approaches have taken some steps toward relevancy; but further steps remain to be taken.

In the child guidance clinic the child's disturbing behaviors became the concern of the professional team. The parents were presumptively classed as pathogenic and their treatment involved uncovering, relabelling, and working through of their own problems. Those parents who demanded that they have help with the child instead of confessing their own guilt in the language of their therapist were awarded a diagnostic label to account for their lack of cooperation (Bandura, 1962). The treatment took place away from the family's natural environment. It was a long treatment with uncertain results. About the only advantage of the child guidance clinic, over other approaches available then, was that the parents were viewed as being part of the problem.

The family therapy approach took on more relevance. The child who disturbed others was viewed as a member of a disturbed family. Instead of the parents going to one consultation room while the child went to another as in the child guidance clinic, all were treated together in one consultation room. This preserved for view and manipulation some of the interpersonal aspects of the problem. For example, child behaviors under the control of the father were more likely to occur in family therapy where the child was in the presence of the father himself. (See, e.g., Satir, 1964.)

The method we shall present tries to take more steps toward relevancy. Traditional psychotherapists often talk about the problem rather that observe it directly. Even the social case worker, who once frequented the natural environment via home visits, has now left the setting in which the behaviors of concern occurred to sit instead in her own consultation room. The social worker not only relinquished the best vantage point but also adopted an irrelevant intrapsychic language. It should be noted that, unless the professional has a good view of the behaviors of concern, it is all too easy to accept the client's language about the behaviors of concern as the important data. Since the professional who stays in his office instead of entering the client's natural environment has no direct way of knowing about the referents of the client's complaints, he then attempts to build a system entirely based upon relations among behaviors of the client in the professional's office. These may or may not bear a direct relationship to behaviors in extratherapeutic settings.

Successive Approximations to the Present Method

The present method focuses on the interactional sources of behavior. It uses some of the convenience of the office but insists on home visits by the professional. It goes further. It attempts to provide proper contingencies for parental and child behaviors.

We define the problem in behavioral terms. This includes baseline or present behavior as well as terminal or desired behavior. We explore the antecedents and consequences of the current behavior.

The approach is a blend of behavioral analysis on the one hand, and of consultative psychotherapy on the other. The former pays particular attention to (1) good data, (2) controls, (3) observables; the latter, to (1) dealing with the problems brought in by troubled people, (2) consulting across the table with them, (3) behaviors in their natural environment. Contrary to usual psychotherapeutic practices we professionals take responsibility for the outcome by negotiating and implementing a proper contract. We, and the parents, come to an agreement about what child behaviors the parents want changed, about what parental behaviors we thus want changed, and what parental reinforcers we shall control. If we fail to achieve the behavioral goals for any family, it is our fault as professionals who claimed expertise rather than some inadequacy of the parents and/or the child. It is in this context of less-than-complete success with a family that we attempt to re-examine and improve on our methods. In the next paragraphs we shall present some of the major successive approximations we have thus taken.

the first problems we dealt with included study problems, laziness, hostile behavior and social skill problems in a public elementary school. In our work at the school the following two related assumptions were made:

1. All behavior is appropriate to the environment.

2. All behavior can be changed by appropriate environmental changes.

Faced with the request to work on a child's emotional disturbances we stated the following priority of procedures. First we work on "job" skills; we change the child's behavior so that he is positively reinforced more in natural environments. Later we work on the "internal feelings." We found that when a child was doing well that the behaviors which parents and teachers scored for "disturbed internal feelings" had also changed for the better.

The major statement of our task was as follows: Give to the teacher and/or parent constructive steps which could be taken to change the child's environment so that the child's behavior would improve. We thus avoided blaming the teacher and/or parent. (We were to learn later that presenting these steps was not sufficient. When we learned that, we began to take upon ourselves more responsibility for the parents' and the teacher's behaviors.)

The next families we worked with were families whose children were being treated at a center for autistic children. We worked with several of these families and learned some lessons with them.[1]

One family was composed of a father and two young boys. The child of concern was in residence at the treatment center while his brother lived at home with the father. We began consulting with the father in an attempt to teach him how to deal more effectively with his "autistic" child. The father was a ready-enough student; however, he was with the child only one afternoon every other weekend. It became clear that a basic requirement was that we should deal only with parents currently responsible for their child's environment. We did not succeed with this parent.

Another of these families was valuable to our development. With that family we soon learned that this approach works with a very disturbing child, that the parents can be very good therapists for their child and, through their efforts, the child can be "cured of autism." "Cured of autism" means here that those who give diagnostic labels can be persuaded by large enough changes in the child's behavior to change the label. This apparently happened with this child. When we started with his parents he was described as exhibiting a number of very disturbing behaviors both at home and at the treatment center. After a short time (about 3 months) a home visit was made by someone who did not know the details of what we were doing in our weekly meetings with the parents. The report written of the child's behavior at home showed him to be behaving much better at home than at the treatment center. The treatment center staff called in the parents to learn what they were doing. On the basis of the child's behavioral changes, the child's diagnosis has changed from (1) Autistic to (2) Schizophrenic to (3) Emotionally Disturbed and Mentally Retarded to (4) Mentally Retarded. In our view since the diagnosticians were well qualified, the method which the parents used as therapists was successful with this family. The child then was ready to learn verbal and other academic skills.

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[1] Six months after starting with these cases the senior author was joined by others whose orientation toward behavior derived largely from the animal learning laboratory.

A third family from the treatment center demonstrated the need for durable control over the parents. We did help them deal with a number of very deviant and disturbing behaviors (e.g., smearing his feces on his father's bedroom furniture); however, once these most disturbing behaviors were taken care of, the parents' interest in changing (probably a function of the aversiveness of the child's behaviors) seemed to drop off. We developed from this a set of "harpoon" techniques. Our general approach has been that we attempt to acquire control of reinforcers for the parents (e.g., their money) so that they behave appropriately until the new behaviors of the child take over the control of the parents' new behaviors.

The fourth family from the treatment center represented the same sort of failure as the third. We shortly were able to get rid of the deviant behaviors and instate others. However, the parents terminated because they didn't like my theory and because, as they said, they didn't want to invest too much into this child. (They had four other children, all developing well, and each parent had a career outside of the home.)

To replace the two families who were terminated, another family was referred by the treatment center. With this family we found that the parents did not stay interested in any one behavior long enough for us to consult effectively with them. We then began to ask the parents for a ranking of the behaviors of concern. Now we regularly ask for each of our pairs of parents to bring in the following: a written list of about five child (positive) behaviors to be increased and of about five child (negative) behaviors to be decreased. Within each list of five, the husband-wife pair is to rank the behaviors from the most desired to be changed to the fifth-most desired to be changed.

It soon became clear that parents (and other child-care workers including professionals) were more able to specify negative (to be decreased) behaviors than positive (to be increased) behaviors. However, it was vital that the assignment be accomplished, otherwise we could not find a positive behavior to substitute for the behavior to be decreased. It is important to note that putting negative behaviors on extinction may only serve to further deprive an already "hungry" child. Reinforcing beginnings of positive behaviors is a necessary supplement to extinguishing (and punishing) negative behaviors.

At that time a major reinforcer we could control was the opportunity to meet with us. We began to manipulate this to insure that an assignment (e.g., coming in with a list of five ranked positive and five ranked negative behaviors) would be fulfilled. The completed assignment became the "ticket of admission," the parents' behavioral payment to see us. Thus completion of last time's assignment became the admission price for the following interview.

This is not without complications. Unless the assignment is clear, scoring problems arise about whether the task was accomplished.

Subsequently we introduced an assignment checker (who had not witnessed the interview) to check the assignment for its scorability before the parents could leave the interview. Another complication was that the therapist may not wish to exclude the person(s). Another solution involving the parents' money was developed: not completing the assignment became an occasion for the parents to receive debits; these debits counted toward one of their checks(which was in our possession) being sent off to a predetermined third party recipient. A further complication concerns the therapist's ability to make an assignment which is within the parents' ability to accomplish. This is still a "seat of the pants" part of the procedure since the therapist does not know about the family's other obligations and resources.

To carry out the contingent admission the therapist uses an agenda designed to control the therapist and parents. The agenda contains the following sequence of items:

(a) assignment(s) from last time

(b) assignment(s) for next time

(c) free talk

The (a) *assignment(s) from last time* must be received and approved by the therapist before he can proceed to the next item. If any part of the assignment from last time is not completed, the therapist attempts to get the parents to understand that assignment, he makes another appointment for the parents to return with the assignment completed; and he sends the parents off. He does not lecture or get angry with the parents. (In the last study with nine families the parents were not sent off. Instead they were given debits for not having completed the assignment. The remainder of the hour was spent working on the (b) *assignment(s) for next time* as is duscussed in the next paragraph.)

If the therapist has received and approved the (a) *assignment(s) from last time*, he then proceeds to the (b) *assignment(s) for next time*. The content of an assignment is built upon what the overall plan for the family is and to what point in the plan the family has progressed. A non-completed assignment from last time would, of course, slow the family's progress. In a sense the aversiveness of the child's behavior and the threat of the loss of the parents' check(s) represent our major attempts to push the parents to move.

Item (c) *free talk* in the agenda is available if items (a) and (b) are completed before the end of the consultation hour. In (c) *free talk* the parents can talk of what they please and how they please and receive unconditional positive feedback from the consultant.

The above are some of the steps we took from 1964 to 1967 in our attempt to improve the therapeutic outcome. They have been presented here to illustrate our successive approximations approach. Our goal was to build an operant oriented family therapy which has general applicability. Our families have tended to have above average income (few with incomes below $8,000, most above $10,000 per year) with above average education (three Ph.D.s in the 50 families, almost all parents at least high school graduates). The complaints about the child ranged from so mild that no diagnostic label had ever been applied to the child to so severe that the most casual and untrained observer would be disturbed by the child's behavior.

We now proceed to describe the Methods involved in a therapeutic study of nine new families. In two ways the Methods section attempts to address itself to our major purposes:

1. We are committed to develop a method. In this Introduction a number of developments have been described. In the Methods section we describe improvements from the first treatment period to the second.

2. We are committed to describe the therapeutic process. We present general features of the method, specific applications, case studies, and a quantification of the process.

3. We are committed to evaluate. This has led us to use expert "naive" raters of therapeutic outcome who were drawn from outside of our project as well as those who were part of our staff.

4. We are committed to improve. We present the method in enough detail so that the flaws can be seen and perhaps instigate attempts at improvement.

5. We are committed to disseminate. Hopefully this document disseminates and thus makes replication more likely.

Methods

Some General Comments about Subjects, Procedures, Measures, and Design

All the work with parents of disturbing children dealt with over 50 families. The first families came from a public school in the District of Columbia. Later families were referred by Linwood Childrens Center, the National Society for Autistic Children, and the Prince George's County Board of Education. The last study attempted to serve nine of the 40 families who responded to a feature article in the *Washington Post*; it is this therapeutic study with nine families that this Methods section deals with.

At the outset in the Fall of 1964 the public school families were counselled without tape recordings being made. The last families were counselled with audio and video tapes being made, with observers making tallies when specific behaviors took place, and with a supervisor communicating via a walkie-talkie with the counselors. Thus our description of the *process* became successively more and more extensive and expensive. A quantitative process study to analyze the process data has been started. The non-quantitative process data are reported here. The *outcome* measures of the therapeutic endeavors also progressed from relatively informal to comprehensive, unbiased video tape recordings of parent-child interactions in their homes and in our offices, psychological tests of the parents, and daily parent reports about the child.

At this point we include Table 1 which outlines the design of the last study.

Table 1. The Design of 1967-1968 Therapeutic Study

Three groups of 3 families each

Periods	Duration (in weeks)	3 *A* families	3 *B* families	3 *C* families
1. Measurement I	3	Parent-child video tapes taken in home and office; parent psychological tests (by Daston)		
2. Treatment I	12	MINIMUM CONTACT I	NON-OPERANT I	OPERANT I
3. Measurement II	3	Video tapes same as Measurement I; psychological tests taken over by Hill.		
4. Treatment II	12	OPERANT II	OPERANT II	MINIMUM CONTACT II
5. Measurement III	3	Video tapes and psychological tests same as Measurement II.		

In this Methods section we present a series of papers which describe these procedures which are listed in Table 1. To describe the therapeutic process we include three papers: one on the developments up to and including Treatment Period I, the second on Treatment Period II, the third outlines the methods for a quantitative description of the therapeutic process.

As can be seen in Table 1, the late Paul Daston administered the psychological tests in Measurement Period I. He also supervised the non-operant treatment until his sudden death; Dr. Stanley Pavey took over supervision of the non-operant treatment. This change in personnel is described in more detail in the section on Treatment I and in the report by Dr. Hill mentioned below.

To describe the outcomes of therapy we attempted to get an operant and a non-operant expert to view and rate our video tapes according to their own system. We were unable to get a non-operant expert. We are pleased to present an unedited paper by Dr. Donald M. Baer and William Merigan which presents their ratings of some of our tapes. (Merigan and Jay Miller are now rating the remaining tapes. The Baer, Merigan, and Miller data will be reorganized to classify by parent. That report is not yet available.) We also present a description of tape ratings by our own staff. Data are appended to the case reports which are included in this Methods section to illustrate the method and the outcome.

Also describing therapeutic outcome is a report by Dr. Evelyn F. Hill. This report describes the psychological testing of the parents.

Several major data gathering procedures were employed. While they are described in detail elsewhere, it seems useful to review them here:

1. Audio taping the individual consultation sessions. Provisions were made for on-the-scene ratings of live consultation sessions. This was accomplished by placing raters in a central observation room equipped with one-way mirrors. Observers monitored parent-consultant interactions through the same audio equipment used in providing permanent tape recordings of the consultation sessions. Since raters were required to make judgments at regular intervals, a tone was sounded every thirty seconds and superimposed on to recordings of the sessions.

2. Case reports (process and outcome). The individual consultants wrote a report each week describing the therapeutic process and progress. At the end of a treatment period each sonsultant wrote a case report according to an outline (attached at the end of report) and in consultation with his therapeutic supervisor.

3. Video tapes showing parent-child interactions

(a) Home video tapes (three for each of nine families for each of three measurement periods)were taken to sample various types of interactions (one tape each for father-child, mother-child, father and mother with child). These tapes were rated by people who did not know about our design.

(b) Office video tapes (two for each of nine families for each of three measurement periods) are taken in a standard way as described below. The rating of these tapes by our own staff and by Dr. Baer are presented below in this Methods section.

4. Parent psychological tests. In the three measurement periods the fathers and the mothers were given a variety of standard and experimental psychological tests. They are described in Dr. Hill's independent report.

Apparatus

The apparatus used consisted of audio and video tape recorders, and associated equipment. Our work was conducted in the Counseling Center of the University of Maryland which has a complex of rooms which share common one-way mirrors. Observation of group educational meetings and individual consultations were therefore facilitated by the physical arrangement. Educational materials such as Reese's The Analysis of Human Operant Behavior (1966), Holland and Skinner's programmed text, The Analysis of Behavior (1961), and other materials written by the project staff were also used. The apparatus which the parents required in working with their children were household items like candies (or whatever else would be used as reinforcers) and poker chips which were used as tokens (conditioned reinforcers).

We next proceed to a description of the selection of the subjects, Measurement Period I, and the three treatments of Treatment Period I.

Selection of Client-Subjects

The participants were parents of disturbing children. The ages of the parents ranged from about 30 to 50 years old. The parents would be classified as middle or upper-middle class. One family was from a foreign nation and another family was Black-American (i.e., Negro). Some of the occupations of the parents were: (1) university professor, (2) officer in the armed services, (3) personnel attached to diplomatic embassies, (4) public relations men for government agencies, (5) teacher, and (6) data analyst. All of the parents were high school graduates and many had college degrees. Two of the parents had advanced degrees. All of the parents had sought professional help for a number of years before participating in our project.

The ages of the children with whom we dealt ranged from four years to fourteen years and the number of children in the families ranged from one to six. One of the nine children of concern was a girl. All families lived in the Washington, D. C., area.

The nine families assigned to three treatment groups of three families each were selected from about 40 applicants who responded to a newspaper article describing our program. (A copy of this August 22, 1967, Washington Post article is attached to this overall report.) These applicants were invited to come to our offices for husband-wife interviews with Walder or Daston to tell us about their child. On the basis of our notes from these interviews we ranked the families living in the Greater Washington Area in order of severity of parental complaint, selecting the most severe. In the interview we told them that to be considered for our program they would have to submit a copy of their latest U. S. Income Tax return; they would have to deposit money (in the form of checks) to be earned back; they would have to attend weekly (Monday or Wednesday) evening meetings; the child had to live at home during the period of the study; and they would have to submit themselves to being tested and observed. In order to obtain the nine subject families, eleven were asked. One refused because his job driving a bus might prevent his coming to all the meetings; the other refused because they did not wish to submit to us a copy of their income tax return. On the basis of severity of problem rankings, we assigned at random one of the three worst to each of three groups, one of the next three to each of the groups, and one of the least severe three to each of the groups. However, Family G was assigned to operant treatment because on the basis of an earlier contact with our staff they had been given operant literature to read. Thus, each group of three was a sample balancing for severity of parental complaint. Some of the complaints were that the children wouldn't learn, speak, play, or interact in a satisfactory manner.

Measurement I and Some Preliminaries to the Treatment

When we invited the families to become part of the project they were told that they were to attend meetings on three consecutive Mondays. The nine families came to these pre-treatment, measurement meetings.

On the basis of the total annual income in the 1966 U. S. income tax returns, (line 9 of form 1040) a unit of money was established for each family (approximately .2 of 1% of the annual income). The incomes ranged from about $9,000 to about $22,000 per year with a mean of about $13,800. The units ranged from $15 to $37 with a mean of $23.64. On the basis of answers to "attitudinal" questions in the interview, they were told to deposit with us a check written (in the amount of one unit of money) payable to each of three organizations: a No. 1 organization to which they had said they'd like to contribute, a No. 3 organization to which they'd hate to contribute, and a neutral No. 2 organization. To indicate the range of "attitude" one family had listed the American Civil Liberties Union (ACLU) as No. 1 and the John Birch Society as No. 3 and another family had listed the John Birch Society as No. 1 and the ACLU as No. 3. If the husband and/or wife did not follow one of our instructions he would earn one or more debits. When enough debits had been earned, the No. 1 check was to be mailed by us to the No. 1 organization and the family was to replace it with a No. 3 check. If another check were to be sent, it would be the No. 2 check. It, too, was to be replaced by a No. 3 check. After that, only No. 3 checks would be involved. In the total study, three families' checks were sent (Nos. 1 and 2 for two families and a No. 1 for a third family). In Treatment Period I, with which this section is most concerned, only one No. 1 check was sent.

The families gave us the three checks each after they agreed to participate. The conditions of participation (including assignment to treatment group) were included in a letter handed to each family. A copy of the letter used for each treatment group is attached to this overall report.

Each of the nine families filled out questionnaires about their child of concern. They were asked to specify the five aspects of their child they'd like more of and the five aspects of their child they'd like less of. By lecture and demonstration we tried to help them to state their complaints in overt behavioral terms.

During the first three meetings the parents who were to be assigned to one of the three treatment groups, i.e., A (minimal contact I then operant II), B (non-operant I then operant II), and C (operant I then minimal contact II), were given instructions on observation of behavior. It had been our previous experience that many people are not used to describing behavior objectively. Thus the objective of the first meeting was to determine what the parent's operant level for observation was and to introduce the basic points on observation which were that their observation should be descriptive, not interpretive and that such descriptions of behavior should be in specific terms rather than in global terms. In order to obtain an operant level, a short play was shown on the television monitor of a video tape player and the parents were asked to observe the play and write their observations down to be read aloud after the play was over. The play consisted of a man and a woman sitting next to each other, both reading. The woman asks the man for a cigarette to which the man responded with a grunt. This sequence of the woman asking and the man grunting cycled several times, with the intensity of the woman's request escalating into a shriek; at that time the man finally and begrudgingly gave her a cigarette.

The behavior in the play offered repeated and relatively simple responses which changed in amplitude. The parents' responses to the play ranged from completely interpretive ("there are deep underlying stresses between them") to highly objective observations ("the woman asked for a cigarette five times with increasing loudness"). It was pointed out that all of the observations by different people were different and that one could not reconstruct what actually happened from the more interpretative ones. The parents were then asked to be highly objective. They were told that the advantages of objectivity were greater reliability among the observers and better communication about behavior. They were not told that this would improve the chances of changing the behavior.

We attempted to structure the behavioral observations made by the parents by giving them data sheets which contained columns for description of the behavior, the frequency of occurrence and its amplitude, and the time at which it occurred. During these initial three meetings the parents were asked to describe five behaviors they would like to see increased and five behaviors they would like to see decreased in their children. As a homework assignemnt, parents were asked to redescribe these behaviors in highly specific terms and to observe at least one behavior from each category using their data sheets.

The results of this assignment was that their observations were not as structured by the data sheets as we had hoped. Most of the parents described the behavior fairly specifically, but few of them used the frequency or time column properly. However, since all of the parents did turn in some homework, we did not send out their check. Some of the parents used the data sheets to write out long descriptions of ongoing interactions between the parents and child, which enabled us to make some interesting albeit speculative functional analysis. For example, Family H reported that repeated head-bobbing in their child was difficult to record because it stopped whenever they paid attention to her. Of course, this suggested to us that head bobbing behavior was being reinforced by the parent's attention to it. Such descriptions of the flow of behavior were valuable and it became apparent that the data sheets were most useful for simple repetitive behaviors for which frequency and intensity could be readily measured. Also, since descriptions of complicated behavioral interactions were insightful for us, we did not discourage them. The last observation sessions were devoted to shaping up parents' talk about specific behaviors using the video tape and player On the tape was a scene with two people playing tick-tack-toe; this was the subject of their observation. The principal investigator (later the operant supervisor in Treatment Period I) as well as the group leader (later the operant group leader in Treatment Period I) participated in the shaping process and each parent in turn was required to talk. If the parents used general terms, they were asked to give examples. By the end of the session, all of the parents were describing behaviors in specific terms and interpretative behavior had dropped out.

We asked the parents to begin recording each day whatever the child was doing the first five minutes of each hour that he was awake and in view of either parent. These daily reports were sent in by the parents throughout the study period in the three measurement and in the two treatment periods. When the parents did send them in, they received a "thank you;" if they did not, they would have received a debit.

Appointments were made for psychological tests of the parents, for video taping of parents and child in their home and for video taping of parents and child in our offices.

The parents signed release forms to allow us to obtain reports from other professionals and to allow us to publish properly pseudonymed technical reports about the families.

All these measurements were obtained for all nine families in this first three-week measurement period. After the 12-week Treatment Period I they were obtained again in the four-week Measurement Period II. Finally, after the 12-week Treatment Period II they were obtained again in the four-week Measurement Period III.

Treatment Period I

The reader should note that in order to better describe the treatment methods we have organized this part of the report in terms of the two 12-week treatment periods. We remind you of the three treatment groups:

Group A (families A, C, and E) received minimal contact I and then operant II.

Group B (families B, D, and I) received non-operant I and then operant II.

Group C (families F, G, and H) received operant I and then minimal contact II.

The more experienced operant therapeutic team (with Walder as supervisor) treated Group C in the Operant I and Group B in the Operant II (with Breiter as supervisor) Treatment Periods. The non-operant I therapeutic team (first headed by Daston and then, after his sudden death between the fifth and sixth interviews by Pavey) treated Group B in the Non-operant I and (with Walder as their supervisor) treated Group A in the Operant II Treatment Periods.

A word about the two minimal contact treatments. As can be seen in the letter to Group A families (at end of report), these families were told that we needed more information about them that home video taping about once every 3 or 4 weeks would help supply. During this minimal contact I treatment period, they were given no consultation by us. More details are provided at the end of this Treatment Period I section.

As can be seen in the letter to Group C families (at end of report), these families were told as their operant I treatment was coming to an end that they could have more (operant) consultation if they earned it. The behavioral price for this contingent consultation is specified at the beginning of the Treatment Period II section.

Operant Treatment I

Some dimensions of the operant method. We shall describe one variant of this operant method along with a non-operant and a minimal contact treatment. Over a three or four year period we have successively modified this general operant approach to avoid errors we had just made (as described above in the Introduction). The description here is largely non-quantitative. (A quantitative description has been developed and is presented in the section by Warman below.) We lean heavily upon self description (e.g., case reports) by the participating and supervising consultants of the operant treatment group. Later in this section will appear a comparable description of the non-operant and the minimal contact methods.

The general format of the method for the operant, and the non-operant groups involves three husband-wife pairs coming to our offices one evening a week (one night for the operant and another for the non-operant). From 7:30 to 8:30 p.m. these six people would attend a group meeting run by a group leader. From 8:30 to 9:00 p.m. these six would go to another part of the building to drink coffee. From 9:00 to 10:00 p.m. each husband-wife pair would meet in one of three small consultation rooms with an individual consultant. At 10:00 p.m. the parents would leave our building. The parents knew that a therapeutic supervisor (as well as observer-raters) was watching and listening to the group and the individual sessions. No attempt was made to conceal the fact that obvious microphones led to audio tape recorders. They were told that on occasion video tape recordings were being made.

In addition to the weekly meetings in our offices each individual behavior consultant in the operant group made at least one home visit a week to watch and react to parent-child interactions.

Selection and supervision of the operant professional staff. The group leader and the individual consultants were all graduate students in psychology or counseling. All had had at least one course in behavior analysis. The range in knowledge was great: the least informed had had two courses in this area while the best informed had extensive course and apprentice work in the classroom and the laboratory. The consultant who was least informed in behavioral analysis was also best informed in more traditional psychotherapeutic techniques and language.

The therapeutic supervisor of the operant treatment was a Ph.D. clinical psychologist (ABEPP diploma in clinical Psychology) with courses and experience in research (a) in learning and (b) in the clinical application of learning. He can be described as an extreme behaviorist. The supervisor planned at least once a week with each member of his therapeutic team. He also met with the four in the half hour between the group and the individual meetings. Finally, he met with the same four for a case conference shortly after the parents left at 10:00 p.m.

A comparable description of the selection and supervision of the non-operant professional staff will be presented below in the section called "The non-operant process."

The group leader and individual consultants were encouraged to establish a colleague relationship with the parents. Not wearing neckties was permitted, even encouraged.

The parents were told that our goal was to teach them a theory and related techniques so that they could solve their own child management problems. The educational group was designed to teach it in general and the individual meetings were designed to help them apply it to their own family.

The educational group.[2] The purpose of the group meetings was to give the parents a generalized ability to analyze complex interpersonal interactions into simplified behavioral paradigms. We hoped that eventually the parents would be able to deal with their children's behavior problems beyond the specific assignments set up for them during the formal part of the project. Based on recent experimental evidence, we decided that this would be best accomplished by giving the parents a good verbal repertoire in the functional analysis of behavior, i.e., teaching the parents operant psychology. While deciding what the parents should know in order to be good behavioral engineers, the question arose as to whether or not it was necessary for them to have a good verbal facility with the terminology of operant psychology. Casual observation reveals many people are "good with people" without being able to verbalize contingencies, reinforcing stimuli, etc.; however, it would be difficult and perhaps impossible to duplicate the particular histories that result in such people. Therefore, we decided that a good verbal ability with the terminology and concepts of operant psychology might serve the parents to guide their behavior when faced with any of a variety of problems with their children.

Another question which arose was whether or not being able to "talk" operant psychology would be sufficient to produce good behavioral engineers. Again, a look around us suggested it was not. The spectre of the psychology professor who can talk the game but who does not use reinforcement principles to improve his own and his family's life or to improve his students' lot was all too familiar to us. Therefore, we decided that the parents would have to be trained to actually use the principles they learned. Of course, the individual sessions were set up to do this by giving the parents specific assignments to carry out.

Our general procedure was as follows: Group meetings were held once a week for an hour. The parents always had a homework assignment to prepare for the class. The class time itself was devoted mostly to discussion of the textual material, the main part of which was Ellen Reese's book, The Analysis of Human Operant Behavior (1966). During these sessions the parents were shaped by the group leader to appropriately use the terms which occurred in the book. The group leader often asked each parent in turn some questions, usually definitions or to describe a principle, and shape appropriate answers. Other sessions were devoted to showing movies, practicing shaping, analyzing behavior vignettes (short descriptions of interpersonal interactions examples of which are attached at the end of the overall report), presenting case reports and in the final session, presenting their plans for the future.

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[2] This section on the group was written largely by Orme-Johnson, the group leader, and edited by Walder, the operant supervisor.

The group meetings were also used to teach the parents specific topics relevant to their work with the individual consultants. In the half hour after each group meeting just before the individual meetings the individual consultants, the group leader and the operant therapeutic supervisor held meetings during which the group leader made reports on what had been discussed in the group that night, and how the various parents had performed. The other members of the staff made suggestions, and could request that specific parents be given special instructions on some topic. During some group meetings the supervisor reinforced the group leader for appropriate behavior from behind a one-way mirror by way of a walkie-talkie. The parents were required to do homework assignments in preparation for each class and these homework assignments were necessary for entrance into the group meeting. The parents were told of this contingency and also that lack of cooperation in doing homework could result in one of their checks being sent out.

The Analysis of Human Operant Behavior by Ellen Reese was used as a main text of the course because of the many examples it contained of the behavioral modification of humans using operant techniques. Toward the end of the course some parts of the Holland and Skinner programmed text, The Analysis of Behavior (1961) were used. Except for the use of a video tape player with its television monitor during some of the early Measurement Period I sessions, no special equipment was used.

Following the three Measurement Period I sessions on observation, the families were assigned treatment groups. During the first Operant group meeting the parents were introduced to an operant definition of abnormal behavior which is (1) an abnormal relative proportion (too large or too small) with which certain behaviors occur, and (2) their occurrance at inappropriate times and places. The specific behaviors themselves are not abnormal. From the list of five behaviors which the parents wanted to see increased, and five they wanted to see decreased, we compiled a list of behaviors which the parents felt were abnormal. Examples are, gesturing and grunting instead of talking, making repeated rocking motions, and bobbing up and down. It was pointed out that under some conditions the occurrence of these behaviors would be considered as normal. Bobbing and rocking, for example, are considered normal during a pop rock dance, at least while the music is on. What is abnormal about these behaviors in these children is that this occurs under unusual stimulus conditions too frequently, and often to the exclusion of more appropriate behaviors. For example, "head-bobbing" occurs while the child is watching television, while being talked to, or while being driven to school. Also, it occurs too frequently, often as much as 50% of the time. Other behaviors such as talking and reading occur at a lower frequency or not at all.

It was suggested to the parents in this operant class that the problem of making abnormal behavior normal was a problem of increasing the frequency of desirable behavior and decreasing the frequencies of undesirable behavior and also in making these behaviors occur under the appropriate conditions. They were told that the group meeting would be to teach them principles of operant conditioning, a technology for increasing and decreasing the frequency of behavior. They were told that the frequency of occurrence of behavior was determined by the consequence of that behavior and they were introduced to the basic principles of operant reinforcement and extinction. As a homework assignment, the parents were required to read the first 23 pages of Ellen Reese's book, The Analysis of Human Operant Behavior (1966). They were asked to read it at the rate of five pages a day, and to get together with their spouse one day a week to discuss their reading. This part of the book covers the following topics: Orientation to the prediction and control of behavior, a distinction between operant and respondent behavior (including respondent and operant conditioning, shaping, schedules of reinforcement, superstition, negative reinforcement, escape, avoidance and imitation). In the next meeting we were not able to cover all of these topics and our original plan for having the parents go through the whole book in two weeks was abandoned. Even though Reese is short in number of pages, the information it contains is densely packed and the parents often reported trouble in following the material. In going through the Reese book with the parents, the group leader found that they did much better in understanding the examples in the book than they did in learning to apply the concept or use the terms correctly. For example, we had to go over several times the various schedules of reinforcement, the procedures and terminology of forming a discrimination, and the distinctions between excape, negative reinforcement and avoidance.

The Reese book is organized into (a) procedures which increase behavior and (b) procedures which decrease behavior. The parents were required to learn a list of procedures from each category. After the parents had read half of Reese, they were shown a movie including behavioral modification of autistic children by Lovaas.   The next session they were shown Ellen Reese's film, "Behavior Theory in Practice." (196   The parents liked the movies and one parent asked to see them again. They commented that it was easier to understand the concepts when they could see what was actually being done, for example, in discrimination training.

The movies also proved to be of value as a reference point for tying down abstract concepts during later discussions.

After the movies, three more sessions were spent going through the Reese book and after that we reviewed. As a homework assignment during the review the parents were required to answer questions on the text and they were given instructions to answer one set of questions per day. Some examples of questions are as follows: (1) Pick one of the following behaviors and describe how you would instate self-control (a) drinking, (b) procrastinating, (c) smoking. Another question was: (2) What are the steps you would use to shape talking in your child? Give an example with a specific word. Another question was: (3) How is discrimination accomplished? Define the following terms (a) differential reinforcement, (b) differential response, (c) discriminative stimulus.

This technique of writing out answers as a homework assignment proved to be ineffective. When going over the questions on the homework, after they were handed in, the parents faltered and demonstrated they had not learned the answers. It became apparent that what they had done was merely copy the answers out of the book and had not really learned them.

One of the later group meetings was devoted to shaping (in a situation resembling the game of charades). During shaping one person was assigned to be a subject and the other was assigned to be an experimenter. The subject was instructed to earn as many claps as possible, each clap defined as a reinforcement. A description of the behavior to be shaped was written on a slip of paper and passed around among all of the parents except the subject. Each parent in turn acted as the experimenter and as the subject for a different behavior. These sessions were valuable in getting the parents to deal out reinforcements and in convincing them that reinforcement works.

After we had gone through the Reese book the parents were asked to do a functional analysis during class of behavior described in a vignette. (An example of a vignette is attached at the end of the overall report.) The parents were generally successful in doing a functional analysis of behavior as for example, in identifying escape or avoidance or behaviors maintained by positive reinforcement, and they were also successful in identifying the probable pattern of reinforcement contingencies which was maintaining that behavior.

One of the functions of the group was to give the parents special training in support of the individual consultant. One set of parents, Family H, was given special training an conditioned reinforcement during one session. These parents were avoiding pairing tokens with a reinforcer and they were reluctant to deprive their daughter of anything so that they didn't have a strong primary reinforcer to begin with. The several examples of conditioned reinforcement in Reese were gone over and the group leader tried to convince the Hs that it was to the child's advantage that the parents be able to control her behavior and to shape up her social behaviors. It was also pointed out that her less than desirable present behavior was being maintained by the present contingencies and therefore, it was their responsibility to change the contingencies they were providing to her. The group later was happy to hear that the H parents were requiring tokens for such reinforcers as food, television, and snacks.

During the last session each of the pairs of parents reported on projects they had been conducting with their children in conjunction with their individual consultant. Since descriptions of some of these projects appear in the case reports by the individual consultants, they will not be redescribed here. However, it was apparent from these reports that the parents who had resisted learning from the materials in the group meeting, the H parents, were also the parents who had done the least to modify their child's behavior. From these reports and from the following week's reports, during which the parents presented their plans for the future, it was apparent that we had succeeded with the Gs and the Fs, but not with the Hs. For example, the Gs had obtained standard teaching materials from a College of Education and they were using these materials in conjunction with the conditioned reinforcer (tokens) which they had established. It seemed quite clear that the Gs had grasped the principles of operant psychology and they were using them imaginatively to teach new behaviors. The Fs also had acquired commercially available teaching aids and were using them in conjunction with conditioned reinforcement. In addition, Mr. F had constructed a program for teaching his child to write numerals. He had drawn outlines of numerals which the child could fill in with a pencil. To fade out the outline, he planned to place a sheet of lined paper over the sheet with the outlines, so that the outlines were barely visible beneath. This was a simple and ingenious program and Mr. G asked for some of the sheets for his child. It was very gratifying to see them exchanging materials and ideas. The Hs on the other hand said that they were "going to do about the same thing as always," and they didn't have any specific plans for the future. It became clear that although we had succeeded with the Gs and the Fs, we had failed to effectively control the Hs' behavior.

Our contingency of sending out checks was highly effective in keeping the parents coming to the sessions and in getting them to get there on time. However, our contingency of sending out checks for doing homework poorly or for not participating properly within the group session did not work. This is probably because they never made infractions great enough to justify sending out the checks, so they never came into contact with the contingency. It is our opinion that our success with the Gs and the Fs in the group was due mainly to the high level of motivation and their lack of competing responses, as well as to our contingencies.

The Hs made good use of escape and avoidance to get around being shaped up during the group meeting. For example, when asked to participate in the shaping game, Mrs. H kept avoiding following instructions and eventually showed her husband the piece of paper which contained a description of the behavior which was to be shaped. It was difficult not to reinforce such avoidance behavior by going on to the next person because such behavior took up so much time and therefore was aversive to the group leader. Another example of this difficulty was Mrs. G's avoidance of answering questions. When asked a question Mrs. G, a foreigner who had some difficulty speaking English, often remained silent for a long period of time. This was embarrassing and took time. It was thus aversive to the group leader who had a tendency to let her off and go on to the next person. Another consideration for the group leader in not forcing Mrs. G to respond was that these long silent periods caused embarrassment and a general suppression in the group behavior. Towards the end of the course, the group leader found out from the G's individual consultant that Mrs. G had not been doing the reading. This points out a major difficulty with our present method, which is that the parents exert considerable control over the direction of events during this group. Another difficulty is that it takes considerable time to determine whether or not the parents had learned the material for that week. A third difficulty with our method was that we did not have a rigorously defined criterion by which to judge whether or not a parent had been successful in learning that week's lesson. A fourth difficulty is the group leader's lack of training in handling a group, especially in handling silences. A general problem of this total project was the lack of adequately trained manpower. This will be discussed at greater length in the section on Conclusions and Recommendations.

From our experiences, we have the following suggestions for improving the efficiency of the group meetings. One possibility is to use a debit system whereby infractions in participation which are too small to merit sending out a check will still receive debits, and these debits would accumulate so that every so many debits a check would be sent out. (As will be seen in a following section, in Operant Treatment II, we instituted 20 debits per check.)

Second, we suggest that the primary text of the course be Holland and Skinner's programmed text instead of Reese's book, since the programmed text is a more effective way of teaching the terminology. It was this technical terminology that the parents have had the most difficulty in learning. This would insure that the parents know the material and the group sessions could be devoted to training the parents to apply the terminology and concepts to complex interactions. The programmed text would also allow an objective examination to be given at the beginning of each session. For example, several frames from Holland and Skinner randomly selected from the parent's reading assignment for that day could be given as an examination at the beginning of each session. Any incorrect answers would result in the parents receiving debits, and the parents who missed a certain percentage of the questions would not be allowed to enter the group meeting. Thus, using Holland and Skinner would be conducive to a quick objective examination and a rigorous criterion of the parent's behavior by which the investigators could apply their contingencies. This is in contrast to rather slow and somewhat subjective impressions of the parent's behavior that we got using our method of questioning them and using Reese as the text. Our suggested system also has the advantage that it eliminates the problem of some parents avoiding being tested during the group situation as was described above.

Once the parents earn entrance into the class by learning the required portion of Holland and Skinner, the class itself could be then devoted to analyzing human behavior examples, taken from Reese or from the vignettes or any other sources. This would provide training in doing a functional analysis in class using the terminology the parents learned for that week. Of course, the entrance exams would insure that the parents knew that terminology. Class time could also be devoted to analyzing interactions of the parents with their children. For example, some of the descriptions of interactions between the parents and their children which they made during the early part of the project could be brought out at appropriate times. The parents could then do a functional analysis of each of these interactions.

The materials for these functional analyses could be designed to parallel the chapters being covered in Holland and Skinner. In conclusion, we found that our use of a fairly standard education technique, the class discussion, worked only for those who were highly motivated to learn to begin with, and we suggest more vigorous and rigorous behavioral controls so that in the future everyone will learn.

As can be seen from the above discussion, we again attempt to reach three out of three families. By reading the section on Operant Treatment II one may see that some of these suggestions were in fact carried out.

The individual operant consultation sessions. To illustrate the operant consultation sessions we include here the case report of Family G.

Basic description of the family. Dr. G is a 35 year old university professor in the physical sciences. Mrs. G, 34 years old and a social worker, also has experience working in an orphanage, with retarded children, and in a Nursery School. There are four children in the family; the oldest daughter, 7 years old; the child of concern, 6 years old in January, 1966; a child who is between the ages of 4 and 5, and a child who is between the ages of 2 and 3. The G family lives in an expensive home in a residential suburb of Washington, D. C. The neighbors are professional men, civil servants, university faculty, and small business men. It appears from visits to the home that the family is religious. Both older children attend school. The home in which the family lives is large and spacious and is surrounded by ample grounds in which the children can play. The general routine in the home is for all of the children to have a rest period in the afternoon from about 1 o'clock to 3 o'clock, after the oldest two have returned from school. During these rest periods the mother conducted her operant working sessions with F.

In the afternoon, when the rest period ends, Mrs. G generally conducts nursery school type activities with her children. Usually, they sit around the kitchen table engaging in such activities as coloring, playing, cutting, playing game lotto. Because of the nature of the father's work he is out most of the day; he is on frequent lecture trips and most of the burden of raising the children is on the mother. During the Treatment Period I, the father worked with F during some of his evenings and on some weekends.

Child's social environment. Stimuli relevant to the child's social environment are the mother, the father, the sibs, teacher and classmates. F's interaction with his sibs is inadequate as defined by the parents. His sibs already have expectations regarding F's behavior, have extinguished some of his social overtures. However, they are friendly and are concerned. Concern by the children for F is evident by their asking when F was observed in the home if he would be all right. One of the complaints of the parents was that F did not show enough social behavior. It seems as though the mother generally exercises positive controls over the children; however, she herself seems to come under aversive control of the father. This last statement derives from observations made in therapy sessions rather than from observations in the home. The family history indicated that the maternal grandmother was institutionalized for what was diagnosed as depression. Also a maternal uncle has been institutionalized. Dr. G seems to be a well organized individual, quite demanding, serious and straight forward, with little time to interact with his children. He has definite ideas about ends and the means to accomplish them as evidenced by his going ahead with some procedures to help F to learn to count, regardless of the advice given to him by the therapist..

Mrs. G is a pleasant woman, who is controlled by her husband. She worked very hard with her children in general, and with F in particular. She is warm toward her children and usually controls them in a positive fashion, but she seemed to lack confidence in her ability to deal with F. This changed, however, during participation of the family in the parent project.

The behavior of the mother during therapy sessions changed as a result of her success with F at home. It seems that as she became more successful in working with the child, she became more active in the consultation sessions. The relationship between the mother and F which previous to treatment was active, in that she was frequently responding to the child, is now improved since she has learned to respond selectively to the child in order to differentially reinforce certain behaviors.

The children frequently play together and respond to one another. There seems to be more responding of the other children to F as the parents attempt to increase F's social behaviors, but there are no hard data to this effect.

Dynamics and relevant history of child's life. F was born of a normal pregnancy and delivery. Due to jaundice a full blood transfusion was required when F was 4 days old. The parents stated that F had some difficulty learning to suck and described him as unusually unresponsive during the first year of life. He did not reach out to prepare himself to be picked up and did little rocking in his crib as a baby. They described the child as appearing dull and stiff when held. And at times they thought that the child was deaf. They further described him as happy when he was not handled. The above description is taken from responses of the parents on tests during Measurement Period I, primarily the Rimland Scale. When F was one year old, the parents moved to the D. C. area. It is not known how long they spent here before a year's trip to Denmark, beginning in 1963. In Denmark, at the age of one, the child was seen by a specialist and was described as "very abnormal." The parents said that F began to walk at about the age of 24 months, he did not imitate, he occasionally put his hands in bizarre positions, and they also described him as liking to cling to adults. Although unclear, it appears that the parents returned to the U. S. when the child was 2 years old (1964). The Rimland Scale indicates that the parents felt that F was never a normal child. F's first words appeared between the ages of two and three years old: some of the first words were "juice," "computer," "cookie," "milk," "no," "please," "B______" (a first name). They described his pronunciation as good at first but the rate of development as slow.

The family was still living in the Washington area when the child was 3 years old. They described him as "looking through people, seeming to be in a shell, and liking to spin objects, and having unusual dexterity in assembling jigsaw puzzles." They also described his insistence on neatness and evenness and that objects not be disturbed. They described F as being fascinated by mechanical objects and also said that he did not maintain eye contact at any time. They said that F had a fear of strangers, noises, and strange objects and had little speech. At no point was there any headbanging but F did sometimes refuse to use his hands. In March of 1965, when he was three years old and three months, the child was taken to ________ Hospital in Washington for an examination. One of the conclusions was that there might have been nothing serious behind the limited speech. At that time the child had a vocabulary of 200 words and some sentences. Most of the speech had just recently developed from the very end of 1964 until the time of the examination in March, 1965. The examiner concluded that the store of words and the pronunciation of words seemed to be within normal limits of a child 3 years old and 2 months, although it was "certainly not advanced." F was described as being negativistic about the examination, as being aloof, as being self-sufficient and maintaining no eye contact although the examiner did say that he did relate to people. The examiner noted some ritualistic mannerisms and described F as being socially immature but also said that there was no actual autism. He further concluded that F's hearing was probably normal and that there did not appear to be any neurologic abnormality. He said that perhaps the boy was slightly retarded but also the fact that Danish was used in the household might be part of the speech difficulties. His recommendation was to have an audiogram on the child made.

In September of 1965, when F was three and one-half years old he was put into a Montessori nursery school which he attended for one year. By this time the parents had heard of two prominent child psychiatrists and had attended some lectures at the National Institute of Health. During April of 1966, the child was seen at the Hearing and Speech Center of a Washington hospital. At the time the child was four years and four months old. Some of the conclusions of that examination were that there was no need for speech therapy and that there was no question of a hearing loss. Further observations were that there was perseverative and ritualistic behavior and staring and giggling. These were thought to be attributable to emotional disturbance. Further observations were that there were fluctuations between cooperation and negativism, that the child was excessively neat and orderly in playing with blocks, and that he said nothing. The Merrill-Palmer Intelligence Test was given and F achieved a score of 103. However, the examiner concluded that because of the fluctuations and inconsistencies in the behavior of the child the score was probably not really interpretable. One month later, in May, 1966, the Leiter Scale was given and an I.Q. of 100 was achieved. Because of the variability in F's behavior, the score was accepted with reservations. The score was considered as an underestimate of the true I.Q. Another conclusion was that F was definitely not retarded. The social age as reflected in the Vineland Social Maturity Scale given also in May, 1966, showed that F had a social age of 2.8 years. The overall picture as described by the examiner was a "generalized behavioral-emotional disturbance, much autistic-like behavior, behavioral disturbance with organic and emotional components is clearly present."

By June, 1966 the child had completed one academic year in a Montessori nursery school. Some parental observations which corresponded with the child's attending the school were that he began to repeat words and phrases, he seemed to acquire more speech, he seemed to understand more, he acquired the ability to sit still and listen to a story, he began to approach other children, and that he responded to commands ("when he wanted to"). The parents also reported that he had not yet been toilet trained by 1966 and he also had begun to wander from home. Occasionally the police had to be sent after him. Because of some infection in his ear during the year, an audiogram was not accomplished. Also during examinations in April and May of 1966, the Peabody Picture Vocabulary Tests had been given. At the time F was four years and three months old. The examiner concluded that F's receptive language age was three years and ten months. He also observed perseveration of activities, ritualistic behaviors, word and picture perseveration, echolalia, giggling, thumbsucking, and staring a good bit of the time. He also noted that F used only one word at a time and generally did not combine words although his pronunciation was good.

By the summer of 1966 when F was four and one-half years old he had been seen by a prominent child psychiatrist. The psychiatrist concluded that F presented typical features of infantile autism, including self-isolation and obsessive desire for sameness. In September of 1966, the family moved to England where Dr. G had an appointment for one year. The child was enrolled in nursery school there and it was felt that some substantial progress had been made during the year in England. Some of these improvements as described by the parents were: the child liked new things, he began to enter games in school; he began to use personal pronouns; and generally his social relationships seemed improved. Corresponding to this time in England, the parents reported that the child had a craving for salty foods, he seemed to have somewhat below average coordination, liked to spin things for long periods of time, and he liked to listen to records although he did not make excessive demands to do so. They described him as being upset when he was interrupted at some activity, and repetitively playing with objects and staring for long periods. They also said that he frequently used an adult's hand to manipulate the environment, e.g., he would take an adult's hand to turn on the television set rather than turn it on himself. During the year in England, from September, 1966 to June, 1967, F was seen in London at __________ Hospital. In June, 1967, he was 5 years old. The conclusions of the examiner at the Hospital were: "F showed a syndrome of infantile autism but his disabilities seemed to be lesser than those of most autistic children. F's difficulties stemmed from factors within him rather than with the parents and the family background. The main disability seemed to be poor language development."

After the academic year in England, June, 1967, F was five and one-half years old, and the parents went to the Continent to spend the summer. F was not enrolled in school during the summer. Upon returning to the U. S. in September, 1967, F was placed in a public kindergarten. The teacher thought that F was retarded and probably made some complaints bringing the problem to the attention of her superiors. In the meantime the parents had returned to visit the prominent child psychiatrist again. This visit to the psychiatrist seemed to be in response to the problem that existed in the kindergarten. As a result of that examination in October, 1967, the psychiatrist concluded that the child "shows the same features of infantile autism, however, there is evidence of improvement." The psychiatrist further wrote that he felt that "a regular kindergarten would be too threatening for the child and would definitely be too much for any teacher to handle." Instead the psychiatrist suggested that the parents enroll F as a day student in (specific) children's treatment center. It also appeared that the psychiatrist's conclusion provided justification for the public school to expel F. He was expelled in the end of September, 1967, and the parents succeeded in enrolling him in a local private day school. By September, 1967, the parents had also made their formal contact with the Parent Project. Since the parents had some exposure to behavior modification literature, they were assigned to the operant treatment group. At the time of their formal contact with the Parent Project the complaints of the parents about F were thet (1) F seldom tells what has happened to him, (2) he screams when frustrated, (3) he does nothing for long periods of time, (4) he is less imaginative than his siblings, (5) he lacks good coordination, (6) he wets bed at night, and (7) his speech is poor (poor intonation). He does use the personal pronouns fairly well, but his speech is characterized mostly by mands (Skinner, 1957). The parents also complained that he frequently leaves the table. The parents also reported that F's progress was definitely related to the fact that they were increasing their demands on him. The two major problems that were presented were bedwetting and poor speech. On the initial problem lists which the parents were required to write as an assignment, they wrote as behaviors to be weakened (1) undesirable sounds such as screams, grunts and coughs, (2) peculiar hand motions, (3) repetitious behaviors such as page turning, finger sucking, looking at and talking about air-conditioners, (4) wandering away from the home and (5) wetting the bed at night. Behaviors listed by the parents to be strengthened were: (1) speech (of which there was not enough), (2) F does not assert himself in play and even when being hurt he does not ask for help, (3) he does not attend to his tasks (4) he does not initiate any activity. The parents also reported that up to the age of four and one-half F had been forcibly fed at the table but since he began to gain a little weight and had become more healthy, they no longer forcibly feed him. His Vineland score at the beginning of the present study showed a social age equivalent of 3.7. Other data describing F's behaviors at the beginning of this study can be gotten from other tests such as the Rimland (1964). This history reveals that early in F's life there was much moving to different environments, e.g., to Washington, to England, to Denmark, back to Washington. We can conclude from this that some stimuli which had maintained some of F's behaviors were removed from his environment. The parents sought much professional help and some of the conclusions and advice given to them indicated that something was wrong inside of F. It might be concluded that this professional evaluation probably facilitated the public school's expelling F.

Therapy and goals of therapy. The Gs were assigned to the operant I then minimal contact II treatment group. The broad goals of the operant therapist were: (1) to teach the parents to perform functional analyses of behavior, (2) to teach the parents skills relevant to behavior control, (3) to encourage the parents to maintain an experimental approach in working with their child; that is to record data and increase the behavioral requirements accordingly, to continually look for new reinforcers, to continually specify new behaviors to be shaped up, (4) to make the parent independent of the therapist in working with their child, (5) and to shape up effective and correct use of technical terminology. Some of the general techniques used to achieve these broad goals were (1) instructing in data collection and operant procedures, (2) making home visits and home demonstrations, (3) having parents describe what actually occurred in the home and then requiring them to functionally analyze what occurred, (4) differentially reinforcing parent behaviors so that behaviors consistent with the goals of therapy would be strengthened, (5) modeling and role playing in the therapy sessinns, (6) constructing assignments requiring behaviors relevant to solving the problems specified, (7) another technique employed which is useful in gaining control over parent behavior, is requiring parents to place signs which catch parent behavior in strategic places in the home. A sign reading "do not reinforce undesirable behavior" was placed on the kitchen wall and was effective to some degree in controlling the behavior of Mrs. G. She said this was particularly effective in helping her to extinguish thumb-sucking behavior. Different goals were emphasized at different times during the course of therapy.

Some problems arose in the use of the above techniques. Occasionally what parents actually did at home was different from what was prescribed by the assignment. On these occasions parents had to report on and analyze what actually occurred rather than what was supposed to occur. In giving assignments to parents, a number of factors were considered. First the assignments had to be realistic so that parents could be reinforced for successfully fulfilling them. It was necessary to give to the father and to the mother separate assignments which were reasonable in the face of other burdens, priorities, and time allowances.

In the first session the goals were to get the parents to specify in usable language what the problems are. In the first session, speech and cooperative play were specified as problems. (Neither label is an adequate description of the behaviors to be modified.) The assignment from the first session was for the parents to generate a list of potential reinforcers, to think of ways to reconstruct the environment in ways to increase the probability of cooperative play, and to collect good data and make relevant observations. It is imperative that the therapist generate clear assignments and very specific and detailed data sheets, since the data sheets can help to control parents behavior. Throughout the initial phases of the 12 week therapy period (Operant Treatment I), the therapist failed in giving clear assignments and also in imposing the aversive consequences for not completing the assignment. In Session #2, F's bizarre hand motions were discussed. The technique we wanted to employ for decreasing these behaviors was to use bizarre hand motions as a stimulus signalling a timeout. Home observations revealed that F's bizarre hand movements usually acted as an S^D for Mrs. G to ask F if there were a problem or if something was wrong. Some of the specific behaviors described during therapy by the parents to be modified were: coloring, use of scissors, social interaction. Upon further specification social interaction was

was broken down to eye contact. It was emphasized that the parents must work on the target behaviors in a systematic manner each day. One of the problems frequently encountered was trying to get parents to use adequate reinforcers. In shaping eye contact, Mrs. G at first was hesitant to use M & M's as reinforcers because of her fear of damage to F's teeth; instead, she used cereal. The eye contact experiment continued in one form or another for 9 weeks with little success. Some of the problems associated with the eye contact experiment were (1) the lack of a good criterion for defining the behavior; (2) many behaviors incompatible with eye contact were being maintained in the experimental environment. As a result of a home observation during the 9th week it was decided to abandon efforts to shape eye contact. Mrs. G did not have the time to sit with F for the required hours to extinguish the behaviors incompatible with eye contact. During the first weeks of therapy, home demonstrations and home observations were faithfully made. In session #3 discussion focused on the necessity to establish adequate reinforcers; we began to discuss the establishment of a token economy. Mr. G assumed responsibility for establishing the tokens as conditioned reinforcers. The parents reported that they bought a buzzer device in the hopes of alleviating problems of bedwetting. By session #4, we were concentrating on eye contact with little success. The data were being collected in a poor fashion. The consultant told the G's that if the data were not collected in a better fashion there would be no interview next week. During that session, the consultant should have worked with the parents in constructing a data sheet which would have controlled their behavior to yield better data. Following the consultant's reaffirmation of the contingencies, Mrs. G seemed quite upset as evidenced by tears in her eyes. Another experiment attempted was to shape up F's orienting toward a person when requesting a drink in the kitchen. Problems of criteria for defining orienting behavior arose. Therefore this behavior was hard to shape. By the fourth therapy session we had already begun to establish conditioned reinforcers. This procedure seems to be important and therefore will be described in some detail. Poker chips served as tokens; initially no behavioral requirement was required to earn tokens. A token is placed on E's (the father's) fingertips and a backup reinforcer is placed in the palm. The child takes the token. If he does not take the token, it is placed in his hand. The token is then removed from his hand and a backup reinforcer is delivered. The delay is established gradually. At the end of the first week the father had data indicating that F delayed the token exchange for 30 seconds but did not delay 45 seconds. (Delay here means that F holds onto the token as if it is valuable and gives it to the E when the backup reinforcer is displayed and offered to F.) The father suggested the use of a bank into which the tokens could be deposited, and removed for the exchange. The behaviors of depositing and removing the tokens would help to mediate the time delay. The mother reported during the 4th therapy session that she was shaping behaviors relevant to identifying letters of the alphabet. She was using magnetic letters on a magnetic board plus a phono-visual book from the public school system. During the fourth session the parents stated that they wanted to teach F to appropriately say "Yes, please" in response to a question in which he is asked if he wants something. To achieve this end, we decided to use food at the dinner table. This experiment was straightforward and simple. F would be asked "Would you like X (some food being served for dinner)?, Say 'Yes, please.'" When F responded "Yes, please" he would receive the food. A fading procedure (Sherman, 1965) was used and within one week F responded correctly to "F, would you like X?" The G's reported that generalization occurred in that F would respond "Yes, please" appropriately to various other questions. By session #5 failures with the eye contact experiment were continuing as were our futile changes in the procedures. During week #5 we still worked on establishing tokens as conditioned reinforcers and did not require behaviors to earn the tokens. (The tokens were being given to F noncontingently.) We discussed setting up a price list so that the token economy would be stable and records could be more easily kept. Toward the end of week #5, Dr. G did require F to count tokens in order to earn them. This was a task which made very small demands in the beginning. The parents reported that they purchased a small chest in which the backup reinforcers would be kept in transparent drawers. They further reported that the token economy was being extended into the _____ School where F was now attending kindergarten. The assignment for week #6 included specifying behaviors that would be shaped with token reinforcement, discussing ways to extend the token economy into all parts of the environment, and generating lists of more backup reinforcers.

During session #6, the father stated that he was working on teaching F to count. And that data from the local private day school indicated that the token economy was being effective. He reported that an observer to the school was unable to pick out F as a child different from the others. The assignment for session #7 was to generate a list of behaviors to be shaped with tokens.

In session #7 the parents reported that tokens were being used extensively throughout the household. They also reported F emitted more behavior when working on tasks which were interesting. They suggested that perhaps that F's boredom was one of the reasons that they were having so much difficulty with the eye contact experiment. Session #7 also revealed that F had successfully delayed exchanging tokens for up to two days. This occurred during a visit in Pittsburgh over the Thanksgiving vacation. F earned tokens in Pittsburgh, but could not cash them in until having returned home. Dr. G reported that F bought a trip to the zoo for the whole family with some of his tokens. Some behaviors specified by the parents to be shaped with token reinforcement were (1) buttoning (2) lacing shoes, (3) counting, and (4) sitting quietly during a story. Sitting quietly during a story became one of our target behaviors. To shape this behavior Mrs. G reinforced F for sitting quietly, listening to a story and turning the page. The token was delivered to F immediately after the page was turned. The schedule of reinforcement was initially CRF, but by two therapy sessions later, tokens were programmed on a VR3 (i.e., three pages turned).

During session #8 we changed the eye contact experiment to require a discrimination task. Rather than have F "look in mommy's eyes," he was to verbally report if "mommy's eyes were open or closed." The goals of this change were to provide a better behavioral criterion for dispensing reinforcement, and to make the task more "interesting."

By therapy session #9 there was indication that systematic records were not being kept on the token economy and that more tokens were available in the economy than necessary (not enough deprivation). After a home observation of the new eye contact procedures between sessions #8 and #9, the consultant suggested that Mrs. G terminate the eye contact experiment. The assignment after session #9 was to continue with F on learning the letters of the alphabet. This endeavor seemed to be the most successful thing that we were doing. Dr. G was to continue working on counting. Other parts of the assignment were for the parents to work on programs to teach F to dress and undress himself, and to present graphed data on the alphabet work.

By therapy session #10, the "Yes, please" experiment was terminated after three weeks of perfect responding by F. Also by session #10 Dr. G had abandoned his own techniques for establishing counting behavior and adopted some of his wife's procedures using plastic numbers on the magnetic board. The parents stated that they wanted to teach F to write. There was some question about the handedness of the boy. The assignment for therapy session #11 was for the Gs to graph the data relevant to bedwetting and the alphabet; for them to gather materials from the College of Education as well as from the public schools to facilitate F's education; to develop programs for teaching F how to write; to continue working with the alphabet. Between sessions #10 and #11 a video tape was made of Mrs. G working with F on the alphabet.

Dr. G indicated in session #11 that he had gotten materials from a local public elementary school as well as from the College of Education. He also related some events indicating to the therapist that he had a fairly good understanding of the concepts we had been using and discussing during therapy. During an experimental session for teaching F to count, Dr. G realized that he was unprepared with the tokens. Therefore, he used marks on a piece of paper instead of poker chips as tokens and these were later cashed in for poker chips. We decided to use breakfast as a reinforcer to shape F's dressing behaviors. During session #11 we also began to prepare for the consultation phase of Treatment Period II. (The reader will remember that the G family was in Group C which received operant treatment I followed by minimal contact II. Minimal contact II is contingent consultation for these families.) The final assignment for session #12 was to determine the handedness of F, continue working with the letters, continue working with dressing as well as counting.

In session #12 Mrs. G reported that she was going ahead with the letter work and had introduced lower case letters from books.

She also used flash cards during the learning sessions. In general she kept good data. The data from the handedness experiment indicated that F was left handed. The father indicated that he did some work on teaching F to write. Dr. G stated that he was using materials from the public schools to teach F to count.

Some of the backup reinforcers used to establish the tokens as reinforcers were opportunity to look at pictures in a book, opportunity to manipulate things on Dr. G's desk, opportunity to watch the washing machine working, opportunity to look at the fan above the stove as it was spinning around, opportunity to type on the typewriter, buying a lunch box with tokens; Pepperidge Farm crackers, M & M's, raisins, fancy candy, ice cream cones, cookies, orange juice, a trip to the zoo. Tokens were contingent on F's counting, buttoning, having a dry bed, pushing a button to open up the clothes dryer, drawing, washing hands, drying hands, sitting quietly during a story and turning pages, working at the typewriter, not thumb sucking, cooperating with the other children, eye contact, and putting on knee socks. In general this set of parents seem to have benefited from Operant Treatment I. They acquired a knowledge of skills of behavior control. They acquired knowledge that would help them to specify reinforcers as well as behaviors to be shaped. They seemed to understand the application of techniques of shaping, extinction, modeling and fading.

The major successes with this family were in making progress with alphabet work, having F sit quietly during a story, having F respond appropriately to requests, and in increasing the frequency of a dry bed. These successes may have been improved greatly had there been more opportunity for home demonstrations and home visits.

A particular weakness in this therapeutic interaction was the lack of clearness of assignments as well as the lack of enforcing the contingencies for incomplete assignments. Had the consequences for poor work been imposed earlier in therapy, more success may have resulted. The problems that existed in the initial phases of the therapy were in (1) getting parents to specify in usable terms what the behavior problems were, (2) getting parents to use adequate reinforcers, (3) keep good data, (4) getting parents to perform good experiments with a clear, consistent set of operations.

Something which became obvious from our interaction with the G family was the necessity for the Parent Project or similar projects to acquire a storehouse of available techniques and materials for teaching children some of the academic skills which society requires them to have. Another thing which became obvious from meeting with the Gs was the necessity to give clear assignments. A technique which hopefully will be used in the future is to require a third party to read the assignment before the parents are dismissed from the interview session. In this way the assignment will be made clear; if the assignment is not clear to the third party, the assignment must go back into the session for clarification before the parents can leave. (This suggestion was incorporated into Operant Treatment II.)

Statements and perceptions of the problems and present status of the family with recommendations. Presently I (the consultant) would estimate that the parents have skills relevant to facilitating the behavioral development of their child, F. Whether they have the time to work with F in the future and how much of their behavior in working with F was maintained by coming to therapy sessions on a weekly basis, are questions which will be answered in the future. I think that these parents are as prepared as we can presently make them for planning, specifying, and using behavioral concepts to facilitate the progress of their child. I think one main problem is to maintain the behaviors of the Group C parents during the Minimal Contact II (contingent consultation phase of Treatment Period II). I would recommend that these parents continue to work with the child in the manner they are working now; that they try to enroll the child in a public school, in September, and that they be cautious of advice to send their child to some institution for "disturbed" children.

We present in Table 2 some ratings of the video tapes of

Insert Table 2 about here

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parent-child interactions in their home. It is clear that improvements were seen along some of the dimensions of importance to the parents.

Non-Operant Treatment I

We shall here present a description of the treatment offered in Treatment Period I to families B, D, and I in Group B. This group received non-operant I and then operant II treatments. There is a case report on family B in this section. This family is also described in a separate case study after the Treatment Period II section.

The function of the non-operant procedure in the design of the investigation. It should be made clear at the outset that the function of the Non-operant procedure in this study was not to compete as a treatment mode with the operant technique, but to serve as a contrasting method of working with the parents. It served largely to point up the differences between an operant and a non-operant approach to helping parents influence the behavior of their children. Although outcome data for the two methods are presented in a later section of this study, they are not intended primarily as an evaluation of the two methods as therapies, but rather as a

Table 2 : Ratings of 40-Minute Video Tapes

Family G

	Father-child			Mother-child		
	Measurement Period			Measurement Period		
No. of non-understandables	I	II	III	I	II	III
$\bar{X}$	104	39.03	41.42	103.79	13.85	33.33
(Range)	(81-138)	(28.29-49.76)	(25.4 - 57.44)	(22.7-184.87)	(10.26-17.44)	(20-42.10)
# of Scores	3	2	2	2	2	3
Time (sec.) non-understandables	I	II	III	I	II	III
$\bar{X}$	99.67	71.22	46.155	149.73	20.52	46.66
(range)	(72-116)	(52.68-89.76)	(33.85-58.46)	(60.54-238.92)	(19.49-21.54)	(37.89-51.58)
# of Scores	3	2	2	2	2	3
No. of questions	I	II	III	I	II	III
$\bar{X}$	38	56.59	45.64	38.39	79.48	152.63
(Range)	(35-41)	(52.68-60.49)	(42.05-49.23)	(36.78-40)	(73.84-85.12)	(146.31-158.94)
# of Scores	2	2	2	2	2	2
No. of answers (multi. prompt)	I	II	III	I	II	III
$\bar{X}$	0	56.91	151.8	6.51	104.61	337.36
(range)	*	(50.73-66.34)	(148.72-154.87)	(5.45-7.57)	(102.56-106.66)	(303.15-371.51)
# of Scores	2	3	3	4	3	2
No. of correct answers (Multi-prompt)	I	II	III	I	II	III
$\bar{X}$	0	33.17	135.38	4.32	71.28	273.68
(range)				*	(70.77-71.79)	
# of scores	1	1	1	2	2	1

blank = only 1 score
* = all scores the same

source for hypotheses for future research which would be more clearly aimed at defining the relation of process to outcome. To ask more of these data would be clearly unrealistic. The non-operant phase of the investigation was, in fact, a stepchild of the project. Little effort went into conceptualizing it, there was no attempt to use trained therapists or to train sufficiently the therapists who were used, and it was clear in the minds of those engaged in the non-operant procedures that its secondary place was in the overall design of the investigation.

In the initial formulation of the design, the technique to be contrasted with the operant was designated "traditional," but the term turned out to be devoid of denotative meaning despite its many rich connotations. The term "non-operant" was decided upon as being more appropriate. Despite its being a negative designation, it was more accurate. It allowed under its wide umbrella almost the full spectrum of techniques, including those drawn from psychoanalytic, non-directive and directive approaches. It even allowed for conceptualization and treatment derived from operant techniques. The clear line of demarcation between the two techniques was that the non-operant therapists did not, and could not without specific training, apply operant techniques in anything like the clearly-defined, systematic and disclipined way that it was applied by the operant consultants.

The therapists. The non-operant designation was also appropriate from the standpoint of the therapists employed in this phase of the investigation. Like the consultants in the operant phase, the therapists were graduate students. All had had at least some exposure to both the operant and non-operant viewpoints. One considered herself eclectic and was impressed with both the operant and non-operant viewpoints; another was most influenced by Haley's (1963) communication therapy. The third believed that the best approach to working with the parents was with operant procedures, but he had had no specific training in applying them. The group therapist had training in operant and in non-operant techniques. His personal orientation leaned in the non-operant direction.

Prior to their involvement in the study, the therapists had no experience in the treatment of children or in consulting with parents about the behavior of their children. One individual therapist and the group leader had only limited supervised practicum experience in doing any kind of therapy; the other two therapists both had some clinical experience which included psychotherapy in a Veterans' Administration hospital.

The therapists did receive training in parent consultation prior to their work in the non-operant phase of the study. It was in effect, a 6-week dress rehearsal during which each therapist worked with a set of parents using procedures which were generally the same as in the project itself.

Supervision. Two supervisors were involved in this phase of the study, not by design, but because of the sudden death of the supervisor (Daston) who had worked with the therapists during the pilot project and the first six weeks of the investigation proper. Both the original supervisor and his replacement (Pavey), though familiar with operant techniques, could be considered more "traditional" clinicians with background in psychoanalytically-influenced psychotherapy. But neither was a specialist in working with children or in parent consultation.

During the pilot project, each therapist had an individual supervisory session in the week following the session with the parents. The supervisor was able to directly observe parts of the interviews, and tape recordings were also used. The same supervision was given during the study proper, except that during this phase (under both supervisors) the therapists met together for an informal session over dinner just before meeting with the parents, and again that night in the half-hour between the group session and the individual sessions with the parents.

The supervision and training of the therapists entailed a minimum of formal instruction concerning emotionally disturbed children or techniques of consulting with parents. Some of the therapists did some reading, but this was not required, standardized, or monitored in any way. The therapists agree that there was a great deal of continuity between the two supervisors; they felt no sharp break in approach despite the fact that the two supervisors had never discussed the project in any detail. Both supervisors were non-dogmatic eclecticists who stressed the interactions of the parents and the children, and their effects upon each other. Pavey, perhaps more than Daston, stressed the relationship of the parents to each other as being relevant, on the assumption that parental behavior toward the child was related to their behavior with each other, and that the most direct observations the therapist could make was of the parents in the interview, and their ways of reacting to each other.

The general design of the non-operant procedure. The design of the non-operant procedure closely parallels that of the operant procedure. The three sets of parents had been selected in the same way as those in the operant procedure, and were subject to the same pretreatment training in the observation of their children, psychological testing, and video taping in the home.

Like the operant I parents, the non-operant I parents deposited checks which would be forfeited should they accumulate sufficient debits. No homework was required of the parents, so that debits were not accumulated for tardiness or absence from therapy sessions in non-operant Treatment Period I. (In their Operant II Treatment Period however, as well as in the three Measurement Periods the threat of sending checks was used as a motivator for these Group B parents.)

There was no contact between the therapists and the parents between sessions exccept for occasional telephone calls related to matters other than their children's behavior. Unlike the operant consultants, the therapists did not make home visits, so made no direct observation of the children. It was up to the therapists'supervisors to decide whether or not to use home visits. The original supervisor decided against it (although visits had been made in the pilot project), and his successor carried on the same policy.

It was the policy of the total study for the supervisor of the operant I consultants to advise the supervisor of the non-operant I therapists of procedures he was using, so that the non-operant people could adopt them if they wished. For example, direct auditory communication from therapeutic supervisor to therapist's earphone was made available to both the operant I and the non-operant I therapeutic teams. Neither of the non-operant supervisors felt the use of the technique would be of sufficient value to warrant it.

The group. The physical setting for the group meetings was the same as for the operant group. The room was cluttered with electronic recording equipment. On three of the walls were one-way mirrors behind which were the observers. The group members sat around a table, their chairs almost touching. It was a crowded, uncomfortable, esthetically unpleasant setting.

Group leader's rationale for the group was that it was a sensitization device to make the parents more aware of how inextricably tied together are their own life styles with their children's difficulties. The parents were to become more aware of their role in the genesis and maintenance of the children's problems. The eventual outcome, it was hoped, would be changes in the parents' behavior toward their children which would allow for changes in the children themselves.

The group leader's presentation of the group to the parents, at the first session, included these points: (1) the members of the present group have similar problems and can therefore exchange information about different approaches to their problems which they have found helpful in the past; (2) through the process of honest group interchanges the parents may become more sensitive to one another's problems; (3) in understanding other people's problems more clearly, it is likely that the group member will become more sensitive to his own problems and understand them better; (4) the group leader's purposes are primarily to act as a catalyst or moderator; the burden of work would be on the individual members.

How things actually progressed in the group was summarized best by one of its members, Mr. D, at the last session. Out of his experience with sensitivity group training, he expressed the criticism that this group had begun very slowly and that only in the last few sessions did it get down to its main task of "taking apart" the group members. This was a valid criticism. The group had progressed slowly because of a combination of the therapist's inexperience and resistance within the group.

The group leader began the first session by having the parents describe their children and to introduce themselves. This was valuable in that the parents seemed to be relieved to find that there were other children like their own and that the other parents were facing similar problems. It was clear to them that they were all more or less in the same boat. It was also valuable in that it gave validity to the group: the parents would be able to share their experiences and help one another.

For the most part, the early sessions were filled with descriptions by the parents of their children's behaviors, and examples of how they had handled different situations. The atmosphere was mostly supportive, but polite. The group leader occasionally interpreted the children's behavior, using the principle that much of the deviant behavior was designed to elicit attention from the parents. The group leader also occasionally made statements that were meant to change the parents' perceptions of the nature of their children's problems. He wanted them to see the children, as not possessed by some demon-like disease, but as behaving differently because of their experiences. He tried to play down the label "autism" with which the children had been associated. (In this paragraph the reader can see that the non-operant group did contain some of the same point of view as the operant group.)

During the early sessions the group leader also used some structuring techniques. He asked the parents to think about specific questions between sessions, and a couple of times began the sessions by introducing topics. One bit of structure--asking the partners to talk about each other as parents--could have been valuable, but was not followed up. The parents complained that they did not know what they were supposed to be doing in the group, and avoided the topic. When attention was focused on the I family, both parents presented the picture of themselves as love birds who got along splendidly, and that was that for the time being.

The air of politeness and avoidance of conflict slowly gave way to more direct confrontation of the parents by each other, mostly as a function of a change in Mr. D who, it had been noted in the group, had not participated much. Whenever he did say something, he had been interrupted by his wife. Along with attention that was being paid to his non-participation in the individual therapy sessions, this seemed to spark him into taking an assertive role in the group. He became its most active participant and the leader among the parents. In the last session, he even told the group leader how the group should have been run; but his participation was largely constructive and served to focus the group on some important problems.

The 11th and 12th sessions were closest to what the group sessions should have been. The group leader was more open about his own feelings of being bored when the parents were talking about irrelevancies, and the group members were beginning to feel freer to be critical of each other. Mr. B came in for heavy criticism during the 11th session because he had allowed his child free access to candy during the Christmas holiday despite attempts to limit the child's candy-eating by their individual therapist and Mrs. B. Mr. D pointed out how the B child was being harmed by this dissension between the parents.

Also in this session, Mr. D, having learned some lessons in his individual sessions about the necessity of spending time with his child, asked Mr. I if he ever gave time specifically set aside for his son S, in a special place. Mr. I hadn't been doing this, and Mr. D responding to the question, "What good would it do?" gave Mr. I a lesson in the benefits of paying attention to one's children.

Individual Therapy

For all three sets of parents, the individual therapists directed attention in three directions:

1. The parental relationship (relationships between parents): It was part of the therapists' conceptualization of the dynamics within the family that the relationship between the parents was of some importance in understanding either the etiology or the maintenance of the child's disturbed behavior. In two of the three families problems between the parents were not hard to find. The most obvious difficulties existed within the B family, where the parents seemed hardly to be on speaking terms. There was little mutual respect, and much mutual recrimination, most of it probably accurate. The relationship was in an advanced state of collapse. It seemed as though a good deal of the child's behavior was directly related to the struggle between the parents to gain control of the child, and to their inconsistent treatment of him. The Bs' therapist was aware of these relationships and attempted to get the Bs to work cooperatively on a number of behavior problems. He hoped that this would foster a better relationship between the parents. But one could not be overly optimistic, either about the parental relationship or their being able to make much of a change in the child's behavior.

The Ds' relationship, though troubled, was less stormy, and there was much resistance, particularly on the part of Mrs. D, to exploring it. It seemed useful, nevertheless, to dredge up some painful feelings because Mr. D's behavior was a factor in both his child's problem and his wife's suppressed anger at him. Mr. D, a busy man, was used to bringing his work home with him and leaving the child to Mrs. D to deal with. He was, in effect, abrogating his responsibilities, both toward his wife and his child. Mrs. D had accomodated herself to this, though she did not like it. Her accomodation allowed it to continue. Bringing up Mr. D's lack of involvement was painful for Mrs. D who, to the end, wished to avoid friction. She did, a number of times, actually try to shield her husband from the therapist's pressure on him to be more active with the child. On the other hand, Mr. D was open to the therapist's venturing into this personal realm. At one point, when the therapist was pressing for Mrs. D's feelings about her husband's excusing himself from family participation because of his work, Mr. D said, "Go ahead, resent me dear." Enough tension was generated by this exposure for Mrs. D to consider not coming back any more at one point; she came only at Mr. D's insistance. Things got better rather than worse in their relationship, though Mrs. D probably continued to feel it better to let sleeping dogs lie.

Attempts to deal with the relationship of the Is was to little avail. There were no overt signs of difficulty, and perhaps there were not any covert problems. They claimed to be love birds who argued now and then but nothing more than was to be expected. In their case there was no obvious relationship between their relationship and their child's problems. Both parents dealt with their anger toward each other in similar ways, mostly by avoidance and joking. The Is seemed to have a balanced, basically healthy relationship. There was a strong need, however, to maneuver around disagreements and conflicts and to maintain the easy going, accepting facade.

2. The child's behavior. Each therapist was, of course, primarily interested in bringing about change in the child. To this end descriptions of the child's behavior were welcomed, and much of the interchange in the sessions was about the child. Suggestions were often made about how the parents might bring about changes, and interpretations were made about the meaning of the child's behavior. An attempt was made to make the behavior intelligible as the result of how he was being reacted to by the parents. The indulgence of Mr. B in the matter of the child's breaking his toys or always having candy when he wanted it, was pointed out to him; the relation of Mr. D's failure to disclipine and teach the child; the rejecting attitudes of Mr. I toward his child and their effect on him.

3. Behavior within the interview. The most direct observations of the parents that could be made were within the context of the group and the individual sessions. On the assumption that here-and-now behavior was representative of behavior at home, the therapists made observations and interpretations of behavior within the interview. In the case of Mr. D, his therapist noted, and talked with him about his turning toward the wall and seeming to be partly absent from the sessions. While detached from the proceedings, he played with his match book, tapping it on the table. Although Mr. D insisted that he was paying attention to wha was going on in the interview, he did admit that his interview behavior was not unlike his detached behavior at home. Calling

attention to his behavior resulted in its changing, at least within the interview, and from his report, at home as well.

The Bs' interview behavior also paralleled their behavior at home, though it was more restrained than they reported it was at home. The anger and hostility toward each other were manifested in their mutual criticisms, and each seemed to be trying to win over the therapist as they tried to win over the child at home. They undermined progress in the interviews as they did at home. The therapist dealt with this by pointing it out to them on a number of occasions. Mr. B's rejection of his wife was always graphically manifest within the interview by his sitting with his chair turned away from her.

The Is were the most difficult to deal with, as far as interview behavior is concerned, for much the same reason that they were hard to deal with in other ways. They were always jovial, good-humored and cooperative; when either of them veered from this, hostility was always cloaked with humor, and resistance with genial sarcasm. This was more true of Mr. I than of Mrs. I. Both in the interviews and at home with the child Mrs. I was straightforward and flexible.

Individual therapy, a specific case. An example of the individual therapy is presented here. Family B is discussed here and also presented again in a more extensive case report below. This case report follows the discussion of Treatment Period II. In that case study are the non-operant I report, operant II report, and the video tape ratings.

The Bs. The therapist viewed his therapy as directive, as it indeed was. It contained, however, a number of other emphases also. For one thing, it was relatively permissive and unstructured. The sessions were informal, free flowing, with no set tasks or consistent use of particular techniques. The parents could speak of whatever they wished, whether it be their own feelings about each other, about the therapist, about their child; the child's behavior, or anything else they felt to be relevant.

Feelings within the session were dealt with. At the beginning of one interview, Mrs. B said she felt as though each time she came she was confessing her sins, and that the therapist was saying to her, "Go home and sin no more." She expressed feelings that the therapist was being very demanding of her. During this same interview the therapist asked Mr. B how he felt about him, the therapist. The therapist's way of dealing with feelings in the session is indicated in the following excerpt from his notes on the interview. The therapist had asked Mr. B how he felt about him. Noting that it was difficult for Mr. B to reply, the therapist went on:

"I said that I felt that he really sees coming here to speak to me as sort of a necessary evil and he agreed that this was true.

I told him that I felt it would be very hard for me to give him anything and he said the he really wouldn't want me to give him anything. I told him that I imagined that his family also felt that it was pretty hard for them to give anything to him."

Interpretation was used quite freely. The therapist inferred that the B's were getting much gratification from the child's dependency and that they were maintaining the regression by the way they treated him. It also appeared that the child was getting much gratification from being disturbed. These things were told to the Bs, simple and directly. What follows is the part of the therapist's note that follows the part cited above:

"He (Mr. B) always has to be the expert; he has to be in charge; he has to be the one that does all of the giving, and I felt that in terms of R that he was getting a hell of a lot of gratification out of treating him like a child. He said that by R's going to bed with him, R is able to show that he really cares about him. I told him that I felt that this kind of love and caring was pretty infantile and that there was more to love than that. At that point he said his whole purpose in life was really to feel appreciated and that R was the only one that gives this feeling to him."

Request for observation was used to make the parents more aware of how R was actually behaving, and how they were responding to him. There was no demand for systematic, quantitative observation; it was primarily a sensitization device. It also had behind it the motive to get the parents to be more cooperative with each other. The Bs seemed to be in competition with each other for the child, with Mr. B clearly having proprietary attitudes and behaviors. Quite often the child was torn between the permissiveness of Mr. B and Mrs. B's attempts to introduce limits, something that was not easy for her. Observing the child was a neutral task on which both parents could work without coming into conflict with each other directly.

Suggestions as to how to deal with particular behaviors and situations were given quite freely. Here the therapist seemed guided by reinforcement techniques. He instructed the parents, at times, in the relationship of their behavior to the child's, as in the following instance. R broke toys with disturbing frequency. Almost every time he did break one his father bought him another. The therapist pointed out that the child was actually being rewarded for breaking toys, and he suggested that the Bs break the cycle by failing to replace broken toys. The Bs carried out the suggestion and put even more limits on R's playing with the toys, and the next week reported an improvement of R's behavior with his toys.

Suggestions were also made concerning R's sleeping habits. R had been sleeping with his parents, something that was especially reinforcing to Mr. B, partly because it gratified his need to have R need him, and partly because it kept Mrs. B at a distance. In this realm, as might be predicted, Mr. B showed some resistance to the suggestions that R start sleeping by himself. Some progress was actually made, but the Bs were not able to be consistent in keeping R out of their bed.

One major direct suggestion made by the therapist was that the Bs attempt to be more civil with each other in front of the child so that the child would have a good model for his behavior. This was an attempt to reduce the inappropriate, irrational and destructive behavior to which the child was a witness in the home.

The Bs experienced a truly eclectic kind of therapy in which the therapist used techniques derived from many theoretical and practical sources for his ways of dealing with them (including operant).

Minimum Contact I

Within the context of this investigation, it was deemed necessary to provide: (1) a group (A) of three families, A, C, and E, (Minimal Contact I and then Operant II treatment) who received no treatment for a period of time equal to the treatment phases so that they might be used as a comparison group for assessing changes that occurred in the Operant I (Group C) and Non-operant I (Group B). It became obvious, however, that it would not be feasible to invite three families into a treatment program, require that a certain percentage of their income be deposited to assure attendance, etc., and then offer this group a 12 week waiting period during which they might seek other active treatment. The major concerns at this point were that families placed in a "wait group" would not agree to remain with the program or they would seek direction from other sources.

To combat these anticipated problems, it was decided that this wait group should be designated as a minimal-contact I group that would participate in all phases of the program (i.e., initial training in behavioral observations, specification of problem behaviors of their child, hourly observations of child, etc.), but these three of the nine families would have a 12-week "treatment" period during which they would not participate in one of the structured treatment groups (operant I or non-operant I therapy). These three families, to receive minimal-contact I and then operant II, were instead informed that a treatment plan had been constructed for them that took into account their particular problem and the project's capacity to provide service for them "within the limits of the size of the staff." The group in essence were thus informed that their particular treatment plan involved an initial 12-week period of minimal-contact with the professional staff. Thus, the minimal contact phase served two purposes: (1) it provided for the desired comparison which was described above; and (2) it established a framework within which the desired data could be gathered under the auspices of a treatment plan which further reduced the risks of attrition due to the period of minimal-contact. The content of this period is described below.

Procedure of Minimal-Contact I. The minimal-contact I then operant treatment II group provided the most concern over attrition and thus was the primary reason for eliminating a phase which contained no involvement with project staff. These three sets of families (A, C, and E) initially underwent the group training in behavioral observation, etc. (described above) and were then informed that a staff decision had been made that we required more information on their particular problem before "active" treatment could be initiated. In order to fulfill this "need" for further information, it was made known to this group that video-taping under the same conditions which were in effect during measurement I would continue for a 12 week period. Each family received a video taping visit approximately once every 4 weeks. In addition, these families were required to send in their hourly observations once every week. There was no contact between these families and the professional staff during this period.

Measurement Period II

This period was expanded from three to four weeks to allow for not only the 3 home and 2 office video tapings for each family, but also the more intensive psychological testing of the 18 parents by examiners trained by Dr. Hill. They, like Paul Daston in Measurement Period I, did not know to which treatment group the parents were assigned to.

During this time the Non-operant I therapeutic team was being readied to offer Operant II therapy to Group A and the Operant I therapeutic team was being readied to offer Operant II therapy to Group B.

Treatment Period II

Minimum Contact II

It was deemed necessary to provide a group that would receive the operant treatment initially and then enter a "wait" period during the second phase of this program.

These families (F, G, and H) who entered the minimal contact II phase after operant I treatment (Operant I then Minimal Contact II) had essentially the same requirements placed on them as did the Minimal Contact I group. Each family received a video taping session approximately once every 4 weeks. In addition each family was required to send in their hourly observations once every week. There was, however, an additional provision for these families which allowed them to make contact with the professional staff provided they could specify, in precise behavioral terms (to the satisfaction of their behavioral consultant) the problems and goals that they would like to work on; and to set up in a tentative way, the steps that they would institute to achieve the desired goals. Two families in this group, F and G, took advantage of this provision; family H did not.

Operant II[3]

Parents of disturbing children have often sought professional help only to be told that they are in some way responsible for their children's problems and that they cannot in any way be helpful in ameliorating these problems. Such parents generally receive minimal advice (Bandura, 1962), and are often told by an expert that their child must be taken out of their home in order to receive the most appropriate therapeutic treatment. However, children who do show some improvement in a residential treatment center, often do not show the same kinds of improvement when returned to their home environment. Generalization into the home thus does not occur.

The present authors believe that much of human behavior is learned and, as such, it can be modified by further learning. Disturbing and non-disturbing individuals have learned different ways of behaving, but the process of learning is the same for both. The difference is in what has been learned, not how it has been learned. In our endeavor to modify the behaviors of parents, we have applied techniques derived from the principles of learning. In their endeavor to modify the behaviors of their children, the properly programmed parents have applied techniques derived from the principles of learning.

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[3] This is part of a prepublication draft of a paper entitled "Teaching Parents to Modify the Behavior of their Disturbing Children: An Operant Approach," by Shlomo I. Cohen, David Orme-Johnson, and Leopold O. Walder.

The therapists and parents have tried to construct environments to selectively maintain desirable behaviors and performances. We believe that the behavioral repertoire of a human being is developed through the interaction of the behavior with the environment. Those behaviors which are rewarded are strengthened, those which are ignored or punished are weakened or suppressed. We have tried, with some moderate success, to apply operant techniques to help the parents of disturbing children learn new ways of child rearing.

What are those operant procedures which we have applied to the parents who, in turn, applied them to their children? We required parents to define the behaviors of their children which they wished to modify; we, in turn, defined the behaviors of parents which we wished to build and modify. The parental behaviors of concern (target behaviors) were: (1) the verbal behavior of the parents in their face-to-face interaction with staff and (2) the behavior of the parents in social interaction with their children (child rearing practices). Once we clearly defined the target parent behaviors, we had to define and develop reinforcers which would allow us to gain control over the parents' behaviors. Some of the reinforcers used were: (1) money, (2) opportunity to meet with us, (3) costs for not performing appropriately, (4) social reinforcement in educational group meetings and in individual consultation and, of course, (5) improvements in the child's behaviors brought about by the parents' proper application of behavior modification techniques. Once behaviors of concern were defined and reinforcers developed, we began programs of behavior modification through the application of reinforcement, extinction, shaping, and fading.

The above steps taken by the staff were the same steps we wished the parents to take in order to effectively modify the behaviors of their children. Another important technique used by the staff was to provide a good behavioral model for the parents. In summary, our goals were to modify the child rearing behaviors of parents in order to effect changes in the behaviors of their children. We shall now discuss, in more detail, exactly what procedures we developed in order to facilitate the teaching of behavior control principles to parents of disturbing children.

The educational program of Operant Treatment II utilized two main methods of conveying information to the parents. The first to be discussed is the group educational meetings and the second is the individual consultation sessions.

Educational meetings were conducted between 7:30 P.M. and 10:00 P.M., one evening a week for 12 weeks. Three sets of parents participated in these evening meetings. After a group meeting from 7:30 to 8:30 P.M., the parents had a 1/2-hour coffee break before meeting with three consultants who each met with one set of parents. The individual sessions took place between 9:00 P.M. and 10:00 P.M. Thus, the therapeutic team consisted of one group leader and three individual consultants.

Group educational meetings. The objective of the group educational meetings was to train parents to perform a functional analysis of complex behavioral situations so that they would be more able to understand and modify the behaviors of their children. To achieve this end we utilized printed educational materials as a basis for group discussions. Before arriving at the format of the operant Treatment Period II group meetings, we conducted a number of exploratory group educational courses. Procedures changed as we learned from each course. Procedures were further refined in Treatment Period II. In general, earlier group educational meetings were not as closely controlled as later ones. The Analysis of Human Operant Behavior by Ellen Reese (1966) was the basic text in earlier courses (including Treatment I operant). During the discussions based on Reese's book, the group leader asked questions of an individual parent and shaped the parent's verbal behavior through prompting and the contingent use of social approval as a reinforcer. Assessment of the early group meetings revealed that they were relatively ineffective and inefficient. In early groups, five parents assumed a passive role while a sixth parent actively participated. We found in early groups that parents had much trouble correctly using the terminology of operant and respondent psychology. When asked to define such terms as "discriminative stimulus," "negative reinforcement," or "generalized reinforcers," they did poorly. We felt that being able to appropriately use the technical terminology was the first step toward correctly performing a functional analysis. To teach this vocabulary and give the group leader more control, The Analysis of Behavior, (Holland and Skinner, 1961) a programmed text on respondent and operant psychology was substituted for Reese's book, as the main text for the course. The programmed text provided an effective method for teaching the terminology of operant and respondent psychology, and was used as a basis for weekly homework assignments. The parents were required to pass a test on the homework from the book in order to gain admittance into group meetings. This assured that parents admitted into each group meeting had a high level of proficiency in using the material from the text. The written tests prior to each group meeting consisted of ten frames, taken directly from the textbook. (See an example of such a test attached at the end of the report.) Points were made contingent upon the correct answers of the parents. Each correct answer earned 1 point. An incorrect answer earned zero points. Each incorrect answer more than one, earned debits which accumulated from week to week. If the number of debits reached a critical value (20), a check previously deposited with us by the parent, was sent to an organization as described above. If a second check was subsequently sent, it was to a "neutral" organization, and a third check, if sent went to an organization which the parents disliked. As checks were sent out parents had to furnish new checks to the undesirable charity. Tests were based on assignments of 3-4 sets from the programmed test.

A number of different kinds of group meetings were conducted. In some group meetings, much group activity was based on a discussion of short behavioral vignettes. In other group meetings, parents presented case reports with data concerning procedures they were instituting at home. The reports were subject to the criticism or praise of other parents in the group. One meeting was devoted to viewing a film on reinforcement therapy, and two meetings were devoted to developing shaping skills of the parents. In the meetings devoted to shaping, each parent had at least two opportunities to shape the behavior of another group member and two to have his behavior shaped by a group member. The parents were divided into teams. Team members not directly involved at a particular time observed the shaping process through a one-way mirror.

Group meetings based on behavioral vignettes. Four different vignette types formed the basis for group discussion during the course. (See example of these behavioral vignettes at the end of this report.) The content of these vignettes paralleled the material in the homework assignments from The Analysis of Behavior (1961). In order to control the behavior of parents who were not responding at any one time, a number of contingencies were instituted. During the group meeting the parents could win points for correctly analyzing the vignettes. At the end of the meeting the parent who had accumulated the most points received $5.00. Each parent was given a copy of the vignette followed by some questions. Five minutes were allotted for writing the answers to the questions concerning the vignette. At random, one parent was asked to answer one of the questions. A correct answer earned two points. After an answer was given each other parent was asked (in serial order) if he (she) thought the answer was correct or incorrect. If a parent correctly judged the answer he (she) earned one point. After each parent made a judgment, the group leader announced the correct answer. If a parent incorrectly judged the answer, he (she) didn't earn any points. Refinements of this procedure were made at later meetings. Asking each parent for a judgment turned out to be inefficient. Therefore, space was provided beside each question on the vignette sheet for statements of judgment. After each parent wrote a judgment which could not be erased, the correct answer was announced by the group leader. At the end of each meeting the vignette sheets were collected and the answers and judgments were scored by the group leader. In later sessions, the parents judged their own answers. The procedure of giving points for the correct judgment of another parents' answer maintained the close attention of parents not answering at any particular time. It was hoped that the parents would thus benefit during those parts of the sessions when they themselves were not answering questions. It was expected that this contingency would reinforce critical evaluations of analyses of behavioral situations.

The behavioral vignettes. 1. The first, and most common type of vignette, was in a form very similar to the programmed text. A brief description of some behavioral interaction was followed by questions comprised mostly of filling in the blanks or supply a term. In early vignettes, parents had to supply the terms such as "stimulus" and "stimulus object." In later vignettes, parents had to correctly use terms such as "neutral stimulus," "conditioned stimulus," "conditioned response," "unconditioned response," and other terminology relevant to respondent conditioning. In vignettes presented even later, parents had to supply terms such as "negative reinforcement," "negative reinforcer," and "positive reinforcement." In the last group of vignettes parents had to correctly identify schedules of reinforcement described in the vignettes. Answers to the vignettes required progressively more sophisticated use of operant concepts as the course continued.

2. In the second kind of vignette, therapeutic techniques for handling problems relevant to the parents were presented. Early vignettes demonstrated the therapeutic implications of "counter conditioning," "fading," and "extinction of conditioned emotional responses." Later vignettes focused on problems associated with developing the parent as a conditioned reinforcer, and the last vignette demonstrated how an aversive stimulus, such as spanking could (with proper mismanagement by a parent) become a positive reinforcer.

3. A third type of vignette was designed to illustrate the wide range of behaviors easily analyzed and understood within the operant framework. One vignette described how knowledge of schedules of reinforcement could be used to analyze and predict bombing behavior. It was assumed that hitting the enemy as he moved along the trail reinforced bombing behavior. Assuming that the enemy was on the trail at unpredictable intervals, bombing runs would be reinforced at variable intervals. Therefore one would predict a steady rate of bombing behavior resistant to extinction. Other vignettes demonstrated how parents shape up crying in their children by "differentially reinforcing" more and more aversive cries. These vignettes also suggested ways of handling this problem.

4. A fourth kind if vignette focused on the analysis of social interaction. These vignettes stressed identifying the discriminative stimuli and reinforcers which two (or more) interacting individuals present to one another. In one vignette, a father's response was also a stimulus for his child. The point stressed was that the child is part of the father's environment and the father is part of the child's environment. When necessary, tables and charts were prepared to illustrate to the parents the operations of reinforcement, extinction, and punishment.

Case reports by parents. Each set of parents presented two case reports during an earlier 12-week educational course (in Treatment Period I). The reported success of parents working well increased the motivation of parents not doing as well. Parents not doing well had "regrets" when they heard how well other parents were doing.

Thus in Operant II Treatment Period an attempt was made to introduce case reports as early as possible in the group sessions so parents could see what was possible and would be stimulated to greater efforts. The case reports also afforded opportunity for the group leader to assess the abilities of the parents in performing behavioral analyses of real situations. The format of the case reports was dictated by Table 3, "A behavioral model for learning," in The Analysis of Human Operant Behavior (Reese, 1966, p. 49). The individual consultants aided the parents in preparing the case reports. During group sessions in which the case reports were given vignettes were not discussed. The individual consultant of the parents reporting, observed through a one-way mirror and prompted the group leader by talking to him through an earphone which he wore.

In the fourth group meeting two parents presented a case report describing how they reinforced behaviors associated with "doing arithmetic" by making money contingent upon correctly done problems. They described how the homework session for their child was made more efficient by extinguishing interactions with the parents which were incompatible with good performance on the math problems. Data presented by the parents showed that the accuracy of doing arithmetic was maintained at a high level, even though the problems were made progressively more difficult.

In the fifth group meeting, Mrs. I presented a case in which she described the use of M&Ms as reinforcers to train her child (a child with severe deficits) to discriminate among objects. The objects were: a spoon, a toy jeep, a slipper, and a cup. The child was required to bring these objects to her from various distances. The distances were increased with subsequent trials. Mrs. I initially programmed 30 trials per day with only two objects. When the criterion of 27 correct trials out of 30 was fulfilled, she introduced a third object. The child's performance deteriorated when the third object was added, but after a few more sessions, performance increased again.

Group sessions for developing shaping skill. In the meetings devoted to shaping the parents practiced shaping using each other as subjects. Shaping was accomplished in the following way: A parent who was to shape was given the transmitter of a walkie-talkie, while the parent who was to be shaped was given the receiver. Instructions to the parent being shaped were to earn as many beeps (reinforcements) as possible. The parent to be shaped went into an adjacent room where he (she) was observed through a one-way mirror but from where he (she) could not see the rest of the (observing) parents. The only contact between the parent being shaped and the parent shaping was the beep reinforcer transmitted by E to S's receiver. Responses to be shaped were: nodding the head, raising the left hand over the head, tapping on a table, lifting up an ash tray, tapping on a wall, etc. The criterion for successful performance was three successive correct responses by the S. Parents were allowed a maximum of 5 minutes to reach criterion. The main point learned from the shaping sessions were that reinforcement should follow the desired response IMMEDIATELY, and that people being shaped need not be aware of (i.e., describe as E does) the behavior that is being reinforced.

The shaping sessions demonstrated to the parents in a very real manner that reinforcement is effective, and provided them with some supervised experience in systematically applying it.

One of the goals of the group leader was to minimize the amount of irrelevant discussion occurring during the meetings. In earlier groups (e.g., Operant I Treatment), irrelevant conversation was largely uncontrolled and parents talked to each other while someone else was responding. In the final group format (of Operant II Treatment), much of the time during the sessions was devoted to writing out answers or scoring them. To an observer, such group meetings may have appeared to be dull. There were no abreactions nor catharses, but learning was taking place and "mental health" being restored. (See, for evidence of this, the report of Dr. Hill on changes of psychological test performance of Group B after Operant II treatment.) The effectiveness of the final group meeting procedures did not depend solely upon social approval of the group leader, but also on the reinforcing properties of dollars, victory in competitition, and social approval of the other parents.

A major problem was teaching the parents to generalize from the rather specific kinds of behaviors required by the programmed text, to more complicated behaviors of analyzing functional relationships in real life situations. The vignettes must be viewed as one small step in facilitating generalization from the short answers to real life situations. Case reports are a second step in facilitating this generalization. It should be recalled that the group educational meetings constituted the more formal, but not the sole means of conveying relevant information to the parents. The individual consultation sessions were equally important in bringing about desirable changes in the child rearing practices of the parents, and in bringing about generalization to real-life situation.

Individual consultation. The format of individual sessions did not change as much with successive courses as did the format of the group meeting. The broad goals of the individual consultation sessions overlapped with those of the group sessions. These goals were:

1. to teach the parents to perform functional analyses of behavior,

2. to teach the parents skills relevant to behavior control,

3. to encourage the parents to record data and maintain an experimental approach in working with their child; to train parents to identify new reinforcers and specify new behaviors to be developed,

4. to shape and maintain effective and correct use by parents of technical terminology,

5. and to make the parents independent of the therapist in working with their child.

Whereas the group meetings focused on teaching a broad overview of operant concepts and procedures, the individual sessions focused on further developing principles discussed in the group and planning their application to the individual situations described by each set of parents.

Like the group sessions, the individual sessions were conducted in a businesslike manner. Parents sat across a desk from the consultant. At least one parent was equipped with pencil and paper. The general procedure was for parents to specify a behavior to be strengthened or weakened and, with the consultant, to develop a strategy designed to bring about desired changes. Each individual session was conducted according to a hand printed agenda developed before the meeting by the consultants. The last 10 minutes of each individual session were devoted to developing assignments relevant to the parents' working with their child. These assignments generally described a set of operations for the parents to fulfill in working with their child. An important part of each assignment was for parents to collect data on the target behaviors and present the data at the following individual session. In this way, the completed data sheets served as "tickets of admission" and as a basis for the agenda of the next individual session. At the discretion of the individual consultant, parents earned debits or were not allowed into individual meetings if assignments were not adequately completed. To assure that an assignment was clear and precise before the end of each session, a third (objective) party read it and pointed out ambiguities in procedures or in methods of data collection. Thus, when parents finally received an assignment, it was likely to be clear and precise. Generally, parents fulfilled assignments and kept good records of the operations they performed and the resultant changes in their child's behaviors.

Invariably, several problems arose in the initial individual sessions. These problems centered around: (1) getting parents to define potential reinforcers, (2) to systematically perform experiments in their homes; (3) to specify in bheavioral terms the problems confronting them with their children. Initially, parents had long lists of behaviors to weaken and relatively few to strengthen. By establishing and then using himself as a reinforcer, the individual consultant was generally successful in modifying the behavior of the parents in directions relevant to solving these initial problems. Generally, the consultants served as a good model for the parents by contingently using reinforcers (especially social), shaping, and extinguishing (parent) behaviors.

Individual consultants attempted early in the treatment to help the parents establish token economies in the household. This was accomplished through relevant assignments and home visits. The consultants visited the home of the parents at least once a week. These visits usually lasted for one hour but occasionally were longer. During these visits the consultants observed a parent working with the child, worked directly with the child to demonstrate a procedure to the parent, or simply discussed the data and consequent changes to be made in working with the child. Generally, however, the consultant did relatively little work directly with the child.

Problems discussed in individual sessions were specific to each family; but most parents desired changes in the following areas: language skills, use of physical objects, play activity, social interacting, compliance to parents wishes, academic skills, bizarre self-stimulatory behaviors, inappropriate laughter, dressing, bed wetting, soiling pants, etc.

We shall now present an illustrative case report of Family I's Operant II treatment. (The Non-operant I and Operant II treatments of family B appear just after this section on Treatment Period II.)

Family I. The first individual session with Family I was a general introduction session. Procedures regarding reinforcement and extinction were discussed. The parents had difficulty specifying potential reinforcers, and clearly defining behaviors to be modified. The importance of extinguishing behaviors incompatible with behaviors to be strengthened was pointed out. The parents described the sounds which S (the 4.5 year old child of concern) emitted as non-communicative and random. The communicative function of these non-English sounds was pointed out. The parents described the boy as "not doing anything." They also described a relatively constant non-reactive and non-changing home environment for the child. They described extensive use of aversive control rather than positive control over the child's behavior.

The first behavior problem was decreasing the frequency with which S climbed up on top of the table during meals. The assignment was for parents to deliver M&Ms to the child when not on the table top.

In the second consultation session, shaping was discussed and demonstrated. Also, data from home observations were used to point out to the parents that the home environment did not maintain many desirable behaviors of the child. These data also showed that Mrs. I did not ask the child to do anything, but frequently gave chores to the younger brother. To increase mother-child interaction, an assignment was given which required the mother to record observations of the child one minute in every ten and interact with him when he was doing something she liked. In subsequent consultation sessions, Mrs. I suggested that S's social behaviors were more appropriate as a result of her having observed him one minute in every ten for a week and having socially reinforced desirable behaviors.

During session #3, two experimental sessions for working with the child were established, one for Mr. I and one for Mrs. I. Mrs. I was to work with the child in the afternoon using M&Ms as a reinforcer to teach S to discriminate and to retrieve objects which she would label. Mr. I was to work with the child in the morning (at 6 a.m.) using small parts of breakfast as reinforcers when the child correctly discriminated between objects and handed them to his father. During the consultation session, role playing relevant to the experimental sessions at home was conducted.

In the fourth session, homework data indicated that both parents were making progress in their respective experimental sessions. A token economy was discussed but the parents did not specify one backup reinforcer to be bought with tokens. The need to expose S to new environmental situations was discussed. The assignment after the fourth session included beginning to establish tokens as conditioned reinforcers, and for the parents to generate a list of five new behaviors to be strengthened.

During session #5 discussion centered on using tokens to buy trips in the car and a walk around the block. The list of behaviors to strengthen which the parents specified for S were: (1) picking up his clothes; (2) putting his plate in the sink, and (3) getting his own silverware before meals.

Assignments for week five were for Mrs. I to program at least three car rides for S, to take him into a store, and to begin procedures for teaching S to put his plate in the sink. Essentially, shaping and fading procedures were employed by the parents. The reinforcer used was the dessert of the meal. Data collected by the parents showed that with parental help S brought his plate to the sink as soon as the contingencies involving dessert were put into effect. In a matter of one week, the parents' prompts were faded out, and on his own S was consistently placing his plate into the sink, to earn dessert.

In session #9, the parents reported they exposed S to three new experiences. These were: (1) S was taken into a new store; (2) S was taken to visit his uncle; and (3) S was taken to the zoo. None of these experiences was disastrous; just the opposite occurred. The parents were happily surprised with S's behaviors. The parents remarked that the child seemed to be a "happier" child, that they were getting along better with him, and that he was more socially responsive.

An assignment given to the parents after the tenth session was to spend at least ten minutes in every 24-hour period collaborating with each other on strategies for new programs with S. It was hoped that the parents would assume more responsibility for developing new programs in working with their child. In the next session they reported that their collaboration was very profitable.

Some results from operant treatment II.

Results of the educational group. In order to determine whether the contingencies controlled the amount of relevant verbal behavior by parents during the group meetings, audio tape recordings from early and late group meetings were rated. Relevant behavior was defined as discussion of children's behavior in specific behavioral terms; answering questions concerning vignettes; any discussion of behavior in operant terms; any discussion of operant terms; discussion of assignments; giving case reports and asking for clarification on terms or procedures. Irrelevant behavior was defined as discussion of children in global terms; avoiding serious discussion by pointless jokes, trying to get the group leader off the topic or encouraging him to talk; two or more people talking at once; and any mumbling which could not be understood.

Ten tapes from an earlier course (Operant I Treatment) and twelve tapes from the last group course (Operant II Treatment which was conducted with more contingencies for relevant behaviors) were rated. Ten samples of group activity were taken from each tape by stopping the tape at predetermined readings on the tape recorder's digital counter. A one-hour tape ran to the number 1000 on the digital counter of the tape recorder. Samples were taken at each "hundred" (i.e., 100, 200, 300, . . ., 1000). The first parent to speak when the tape recorder was activated, was rated as speaking relevantly or irrelevantly by two independent raters.

Procedures for closely controlling parent behaviors were not employed in the early group. In the later group, contingencies specifically designed to eliminate irrelevant behavior were employed.

Figure 1 shows the percent of relevant behavior over sessions as rated by both raters. The earlier group averaged 54% relevant

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Insert Figure 1 about here

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behavior and the last group (with contingencies) averaged 84% relevant behavior, showing that the contingencies did exert additional control. Data points from the second, third and fourth sessions of the early group were not available for rating. The first session of the last operant group reflects the low level of behaviors of parents coming from non-operant therapy groups in Treatment Period I. As described above the later operant group studied here was comprised of parents who had previous exposure to 12 weekly non-operant more traditionally oriented group meetings. Results from the second session of the last group demonstrated that the contingencies were in effect. One can see from Figure 1 that parent behavior quickly came under control of the contingencies and in the last several sessions, relevant behaviors fluctuated between 80% and 100%.

Figure 2 shows the percentage of total possible points that

Insert Figure 2 about here

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each parent earned during each group session. The curves are grouped by families. For comparison purposes, the group averages are also drawn on each graph. The group average is the average score for all six parents for each session.

Figure 2 summarizes the performance on answering the vignettes. The group average shows the mean performance for the parents was 76% for all sessions and was fairly constant across sessions. Figure 2 shows that no parent was above or below the mean in every session. All parents won at least once. The fact that there is relatively little variation about the mean suggests that the contingencies did not discriminate between the parents but worked equally well for all. (More usual teaching methods tend to accentuate individual differences.) The mean score of 76% shows that the contingencies maintained a proficient (although not excellent) performance level.

There were individual differences in performance. Mr. I who won once, was below the group mean 6 out of 9 times. His performance was inconsistent, with scores ranging from 40% to 100%. Mrs. I won three times and was above the group mean 7 out of 9 times. Her performance ranged from 58% to 100%. Mr. B won three times and was above

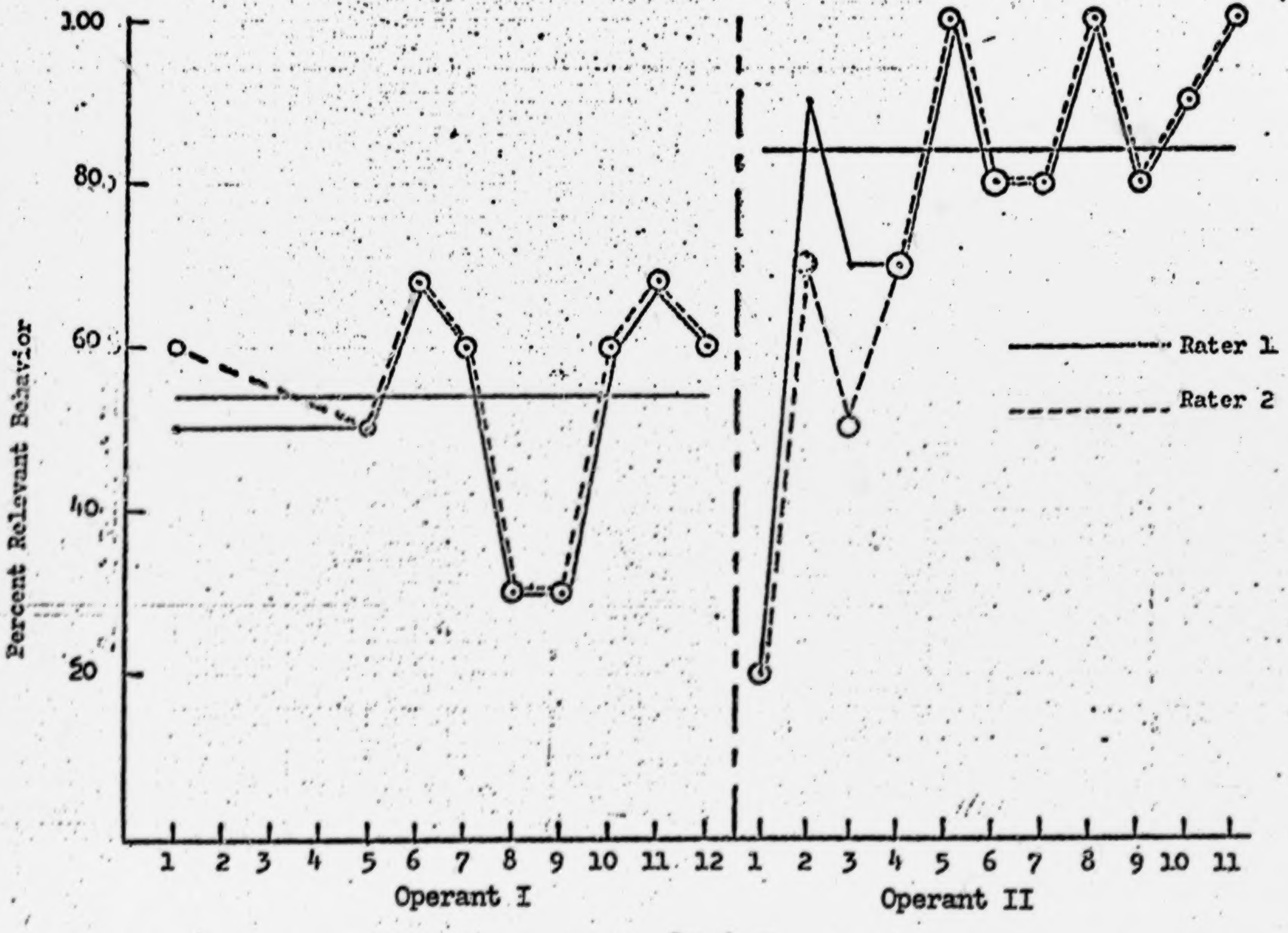

Figure 1. Ratings from audio tape recordings of relevant verbal behavior in an early group and in the last operant group.

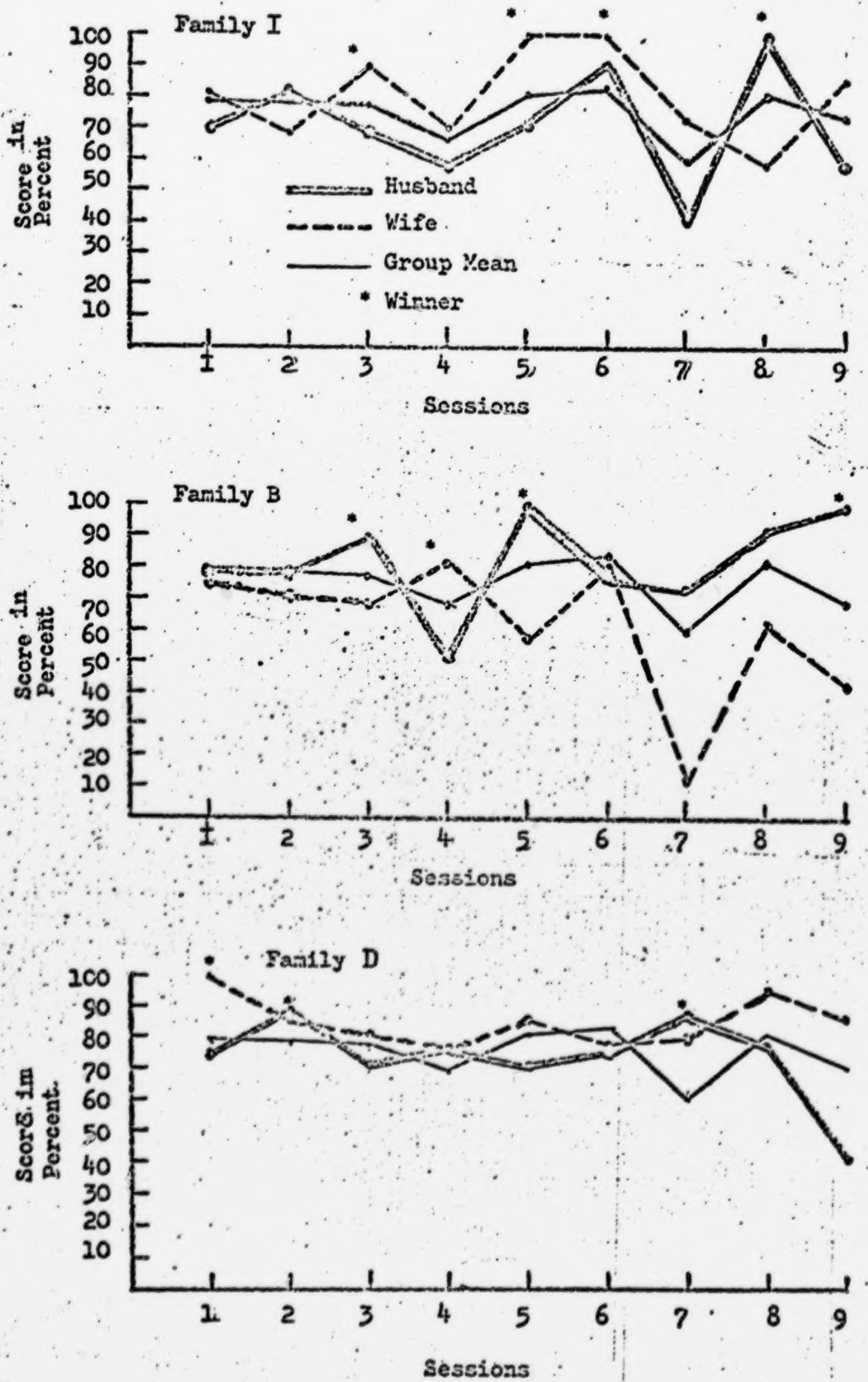

Figure 2. Score of each parent on vignette questions.

the group mean 7 out of 9 times. Mrs. B won once and was below the group mean 8 out of 9 times. Her performance deteriorated in the last three sessions.

Mr. and Mrs. D were the most consistent of the parents. Mr. D won twice and scored close to the group mean for most sessions. His performance dropped on the last session. Mrs. D was above the group mean 8 out of 9 times, but won only in the first session. Mrs. D got an average score of 85.2% while the other averages were: Mrs. B, 82.4%; Mrs. I, 80.2%; Mr. D, 73.9%; Mr. I, 70.2% and Mrs. B, 61.1%.

Mrs. D's behavior illustrates that with the present contingencies it was possible to do consistently well, but not win frequently. This suggests that benefit might have accrued by applying a contingency to the consistency of performance (e.g., by giving a "bonus" for a good cumulative score). Better performance might also have been maintained if each parent's progress had been tracked and consequences applied for poor performance.

Results of individual consultation. Figure 3 shows data collected by Mr. and Mrs. I. The figure shows the frequency with which

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Insert Figure 3 about here

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their son S climbed onto the table at mealtime. Data from the first two days show a high rate of such behaviors before the institution of behavior modification techniques (baseline data). After day #2 (point *a* on Figure 3) differential reinforcement of other behaviors (DRO) was begun (i.e., S was reinforced when not on the table during meals). The effects of this contingency were immediate and by day #7 (point *b* on the figure) the undesirable behavior no longer occurred. M&Ms were used as reinforcers until day #28 (point *c* on the figure), when social reinforcement (for not being on the table) alone maintained the behavior pattern.

More data concerning the behaviors of children could be presented. Each set of parents collected data and developed figures portraying the data. These figures presented in the results section of this paper, are characteristic of the figures prepared by most parents.

Discussion of the operant oriented family consultation. The purpose of the present paper is not primarily to demonstrate that an operant oriented program of consultation leads to desirable outcomes, although results do suggest this; but to describe a method of giving advice and assistance to people in child-rearing trouble. It should be noted that this method requires that therapists quickly gain control over the behaviors of these clients. The therapist must then effectively use that control to strengthen behaviors relevant to problem solving, and good attendance at group and individual meetings.

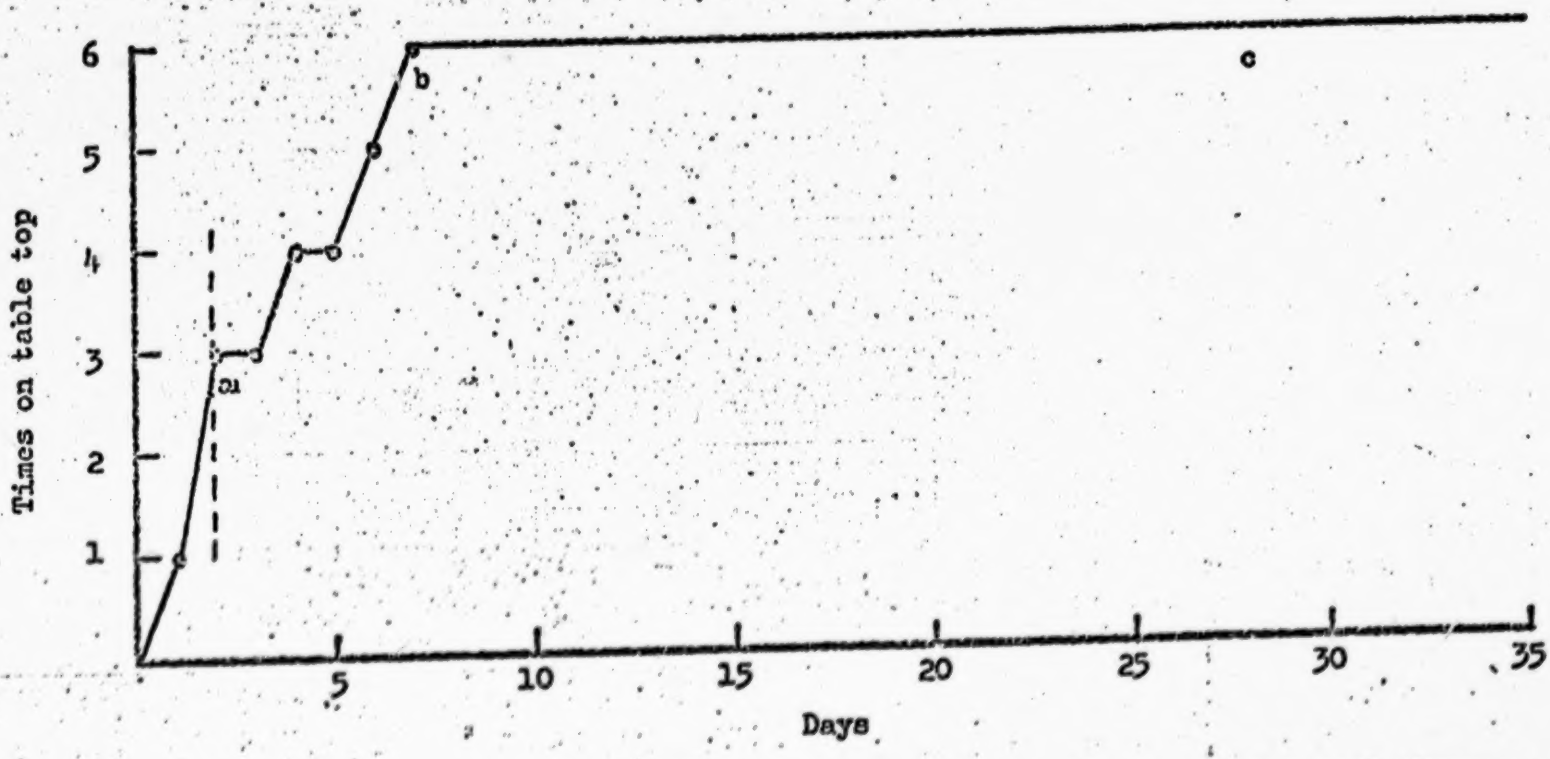

Figure 3. Cumulative record of times child S. climbed onto table top during meal times. (See text for explanation of letters on cumulative record).

The investigation revealed that clients do not "resist" systematic attempts to "control" them when they are being paid with relevant advice and with improvements which they can observe through data collection. Our work strongly suggests that the therapist should utilize the principles of learning to effectively modify the behaviors of his clients.

The program described has a developmental history of three years. Earlier programs were not as efficient or effective as later programs. New ideas and procedures developed as we learned from each course. However, by no means have we arrived at the ultimate educational program for parents of disturbing children. There are still further modifications to be made. We look forward to the establishemt of educational day care centers for these children and their parents. Within this proposed day care center, parents working with children would serve as teachers' aides. Work by the parents in the center would be a requirement for accepting the child into the program. If the parents did not fulfill their work obligation, the child would not be admitted into the center. When the parents did fulfill their work obligations, the child would be re-admitted. Work by parents may be approximately four hours per week. Although parents would not initially work with their own child, they would gain valuable experience applying behavior control principles in an academic setting under the supervision of professionals trained in techniques of behavior control. The described day care center is not viewed as a replacement for the group educational program, but as a supplement to it.

One thing which parents, over all of the courses, consistently stated was that staff use of parents as therapists for their children was extremely important. In seeking professional advice prior to participating in the present project, these parents received the standard answers which not only tried to separate them from their children but also implied that they were somehow guilty of something. On the contrary, our orientation emphasized that parents could be the best (not the worst) of possible therapists for their children. This outlook served to decrease (not increase) the guilt which these parents experienced and to preserve (not destroy) their integrity as parents by requiring them to plan and assume responsibility for the development of their children.

Our work with parents should serve as a requiem for the myth that parents of disturbing children should be separated from their children for the benefit of all. This myth has been propagated because intensive work is required if parents are to become effective therapists for their children. Many professional man-hours are required for preparation of educational materials and home visits. Few professionals currently have the time or desire to engage in such an endeavor when easier, more traditional answers are open to them. It is time, however, we escape equivocal conventional methods and use, to our advantage, the fact that the principles encompassed by operant theory constitute one of the few areas within our field, which is based on experimental procedures and empirical data. These attributes of operant theory are to a large extent, responsible for its effectiveness in teaching. Advice derived from operant theory is concerned with specific steps of action to solve behavior problems. Brim (1961) stated that specific advice to clients is more useful than general, vague advice such as "give warmth and understanding to the child." Kessler (1965) stated that it is easier for parents to fulfill specific instructions with their children than to respond to general theoretical concepts. Davis (1963) castigated our professional conservatism and called on psychologists to utilize the well-established principles of behavior in educational programs for the community at large. After reviewing the literature on the etiology and development of behavior disorders, Davis (1963) concluded "the fact is that mental health educators have nothing concrete and practical to tell the public." To the extent that we do not give relevant information to the public, the above statement is true, but this need not be the situation. We should stop trying to educate the public about mental health, and initiate programs concerning behavior, about which we know something. Continuing laboratory and clinical work (see, for example, Ullmann and Krasner, 1965) have furthered the development of an empirical, clinically applicable orientation which provides guidelines based on established principles and clearly defined procedures. This orientation also provides for the collection of relevant data (instead of generalized case histories) and clear descriptions of procedures; this makes replication by others possible. These characteristics are particularly important in an area when too often adequate controls, clear description and the possibility of replication have been inadequate or totally lacking.

A PROCESS STUDY OF OPERANT AND NON-OPERANT PARENT CONSULTATION

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Statement of the Problem

In reviews of the literature on psychotherapy process research, the appeal is frequently voiced for direct comparisons of techniques which have evolved from widely disparate theoretical orientations. Bandura (1961) has expressed the need for this kind of approach quite well:

> It would be far more informative if, in future psychotherapy research, radically different forms of treatment were compared...since this approach would lead to a more rapid discarding of those of our cherished psychotherapeutic rituals that prove to be ineffective in, or even a handicap to, the successful treatment of emotional disorders. (Bandura, 1961, p. 157)

While studies of therapeutic outcome have frequently contrasted the effects of different treatments within the same research paradigm, process studies have generally considered only a single technique at a time. Frank (1961) argues that this practice which he describes as the bane of investigators interested in the outcome of therapy is no less important in the analysis of process data. Supporting this view, Rogers (1961) in an attempt to formulate an equation descriptive of the process of client centered therapy added the following:

> We may learn that there are many processes of change, each with its antecedent conditions. Perhaps each therapeutic orientation produces its own distinctive changes. We do not know. This makes it imperative to discover the equation in other therapies. (Rogers, 1961, p.).

Despite these appeals however, process research has largely neglected experimental designs which call for direct comparisons of different therapies.

The present process study attempted to heed the above appeals and was conducted within the framework of an experimental design equipped to directly compare two different modes of treatment. The design in question was that of the Parent Project of the Institute for Behavioral Research* - Leopold O. Walder, principal investigator. This project

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involved consultation with parents concerning behavioral problems of their children. Three groups of parents were seen. During an initial treatment period, one group of parents was to be instructed to apply operant principles in the modification of their children's behavior. A second group was to receive non-operant consultation centering around an exploration of family dynamics and expression of feelings. A third group of parents received minimal contact and comprised a wait group. During a second treatment period, the initial operant groups received decreased contact, the non-operant group received an operant treatment and the wait group also received operant consultation. One rather unique feature of the design was that the same consultants who conducted non-operant sessions during the initial treatment period provided operant consultation during the second treatment period. The experimental design including assignment of both parents and consultants is summarized in Table 1.

Insert Table 1 here

Measurement periods provided a record of extratherapy behaviors relevant to the analysis of therapeutic outcome and are thus not directly involved in the collection of process data. This is not to say that process and outcome research are independent approaches to the scientific understanding of psychotherapy. The author supports Kiesler (1966) in his rejection of the long-standing distinction between process and outcome. Kiesler concluded "that the process-outcome confusion has resulted primarily from ignoring the fact that some interview data reflect outcome (patient change); or said differently, that some of the outcome of therapy may be evident in interviews." (Kiesler, 1966, p. 127).

The interrelationship between process and outcome will become evident when the development of the present system of process analysis is described.

Although certain controls, particularly a reversal of the non-operant to operant sequence, were not present, the experimental design of the Parent Project appeared adequate for (and was explicitly designed to serve the) purposes of process analysis. It afforded an opportunity to compare two concurrent treatments on different families, to describe a sequence of treatments on the same family, and to evaluate the transition of consultants from one therapeutic orientation to another.

The goal of the present study was to develop a system of process analysis which would describe and discriminate between operant and non-operant approaches to parent consultation. Following the classification of process research set forth by Auld and Murray (1954), the present study could best be described as both descriptive and methodological. It does not test hypotheses generated from theory. This approach, although not consistent with the deductive disclipine to which

TABLE 1

EXPERIMENT DESIGN OF THE PARENT PROJECT

Family	Measurement Period 1 (3 weeks)	Treatment Period 1 (12 weeks)	Measurement Period 11 (3 weeks)	Treatment Period II (12 weeks)	Measurement Period III (3 weeks)
1		Operant Consultant A		Contingent Consultation	
2		Operant Consultant B		Contingent Consultation	
3		Operant Consultant C		Contingent Consultation	
4		Non-operant Consultant D		Operant Consultant A	
5		Non-operant Consultant E		Operant Consultant B	
6		Non-operant Consultant F		Operant Consultant C	
7		Minimal Contact		Operant Consultant D	
8		Minimal Contact		Operant Consultant E	
9		Minimal Contact		Operant Consultant F	

psychology has traditionally aspired, appears appropriate in light of the current status of process research. A comment by Meehl (1955) made well over a decade ago is still highly relevant today:

> The lessons would seem to be that we know so little about the process of helping that the only proper attitude is one of maximum experimentalism. The state of theory and its relation to technique is obviously chaotic whatever our pretensions. (Meehl, 1955, pp. 374-375).

Some Dilemmas in Process Analysis

In a review of the small groups literature, Olmstead (1959) made the following observation:

> The phenomenon which the student of the small group observes typically consists of organisms making noises at one another. To make sense of this phenomenon the observer must make distinctions; by introducing clarifying conceptions he tries to bring order into a buzzing confusion. (Olmstead, 1959, p. 94)

To "bring order into a buzzing confusion" is essentially the task of process analysis. Research in this area requires the development of reliable and valid measurement systems to describe complex human interactions. Since the raw material of process analysis is generally verbal, an investigator is faced with the tasks of specifying verbal units, of distinguishing between the topographical and functional characteristics of language, not to mention a whole host of practical difficulties in simply recording verbal interactions. These tasks are awesome and although they have been initiated frequently, rarely have they enjoyed any enduring success. Some of the dilemmas which have arisen in process analysis will be described below.

Selection of an Observational Technique

Heyns and Lippitt (1954) presented an early but insightful review of observational techniques. Two basic observer systems were distinguished: category sets and rating scales. The former involves the identification and classification of behaviors according to given preselected categories whereas the latter involves the assignment of some numerical index to a behavior or set of behaviors. According to Heyns and Lippitt, the tasks are essentially the same under ideal conditions. Both achieve maximum reliability and validity when the behavior to be observed is defined as precisely as possible. Heyns and Lippitt cite the work of Carter *et al*. (1951) as supporting the contention that the reliability of observer systems is positively related to agreement between category and rating scale procedures. Carter *et al*. asked observers to codify a set of behaviors and also to rate the participants along 7-point scales on certain personal traits. Ratings were correlated with scores derived by combining categories which might be subsumed under the global trait characteristic. Heyns and Lippitt apparently failed, however, to note that the latter part of the procedure of

Carter et al. -- namely, grouping categories to define a trait -- is itself a rating task. The basis for selecting certain categories to comprise a trait was rational or subjective rather than empirical. Thus, the study of Carter et al. lends direct support only to the similarity of two rating procedures.

Even if it were shown that categorization and rating procedures approached identity under ideal conditions, ideal conditions rarely present themselves. The verbal behavior typically observed in process analysis is far too complex to quantify with complete precision without dividing it into miniscule and perhaps meaningless units. Such precision would also require a vast range of finely discriminable categories or variables relevant to the process of psychotherapy and work in this area is currently under way (Harway and Iker, 1964; Psathas, Cleeland and Heller, 1965). Computer technology has not concentrated on the problem of specifying a socially significant unit of analysis however. It generally has relied on individual words as units and in so doing has probably overestimated their significance. Computer approaches have also largely ignored non-lexical dimensions of therapeutic process, particularly intonation and temporal characteristics. Under the far from ideal conditions which currently exist therefore, categorization and rating procedures are highly dissimilar approaches and it is the dilemma of the investigator to determine which is more appropriate for his purposes. In general, category systems in order to be reliable focus on relatively molecular units occurring at preselected intervals while rating procedures capture the more global or molar features of a given process but fail to describe the precise sequence of events. In psychotherapy research, rating scales are more frequently selected than category systems due probably to the complexity of the stimulus material and the desire to generate broad statements descriptive of therapeutic process. Selecting one technique over another may solve an immediate problem but does not provide a solution to the ultimate dilemma of molar vs. molecular description.

Other problems in process analysis center around the dimensions of observer systems outlined by Heyns and Lippit (1954). These include the exhaustiveness or comprehensiveness of the system, the degree of inference required of the observer, the size and discreetness of units of analysis, the use of contextural cues, and the range of situations to which the system should be applicable. Added to these problems is the sheer technology needed to collect and preserve therapy records. These problems are best illustrated in the context of actual investigation. Examples of process systems are thus presented below.

A Review of Selected Systems of Process Analysis

Bales (1951) has constructed a category system designed to describe behavior in a wide range of situations. Observer judgments require a high degree of inference and six months of training are generally required to produce reliable results. The unit of analysis is subjectively determined. In Bales' words, the "unit to be scored is the smallest discriminable segment of verbal or nonverbal behavior to which the observer, using the present set of categories after proper training, can assign a classification under conditions of continuous serial scoring" (Bales, 1951, p. 37)

Bales' system is frequently cited as the premier set of categories for process analysis. Despite the system's sophistication, however, it is not generally used in current research. This undoubtedly stems from the amount of training required. The chief weaknesses of the system are its subjective specification of the verbal unit and the high degree of inference required to classify the unit once it is identified. The system requires that observers arrive at some judgment about mentalistic events such as inner feelings, wishes, evaluations and speculations. The assumption of a one to one correspondence between certain overt responses and internal events is precarious to say the least. Finally, even if the Bales system could be used objectively and be more efficient in terms of obtaining reliability and of being empirically valid, its judgments are directly relevant only to response styles and not to content. The system deals with the question of how participants respond but does not convey the topic of conversation. This is a trend that has been followed in many systems of process analysis. By placing the emphasis on form rather than substance, the Bales system and others like it are responsible for the loss of vital data on the content of complex verbal interactions.

The categories of Heyns (1948) were developed to study the process of decision making conferences. Although the observer is not required to make inferences about the motives and feelings of the actors, judgments still require a complex subjective evaluation of verbal responses in terms of their theoretical problem solving function. The unit of analysis is also defined in a subjective and tautological manner as in Bales' system. Also shared with the Bales system is solitary emphasis on style to the exclusion of content. Thus Heyns' set of categories appears to suffer from the same difficulties found in Bales' work.

The system of Steinzor (1949) requires a high degree of inference regarding motivations of the actor. An attempt was made to define an objective unit of analysis. Units are defined as entire statements occurring between statements of others or separated by at least five seconds if spoken by the same actor. Defining a unit objectively raises the general issue of context. Within a given unit, should the observer attend only to the cues presented in that interval or should he retrieve previous responses which place the statement in context? Clearly a given verbal response may have quite different meanings in and out of context. Although the unit was defined objectively, Steinzor failed to specify how context was to be taken into account. Thus the system remains largely subjective. Another problem centers around Steinzor's particular specification of the verbal unit. It is not infrequent for an actor to speak over a very long duration without interruption or five second pauses. To equate this with a one or two word response is clearly unrepresentative of the behavioral process taking place.

Fouriezos, Hutt and Guetzkow (1950) developed a system based on behavioral cues for dependency, status, dominance, aggression and catharsis. Since the system is designed to detect motivational states within individuals, it clearly requires a great deal of inference on the part of observers despite an effort to develop a manual of behavioral cues for the various needs in question. No specific unit of analysis is specified. Rather observers use categories only as a framework to make a final global rating of the actor's behavior over an entire session. The combination of a categorization and rating task is an interesting approach that will be discussed later.

The system of Carter, Haythorn, Meirowitz and Lanzetta (1951) requires less inference on the observer's part than previous systems. This does not mean, however, that the categories are objective. The system runs into the difficulty of distinguishing between topographical and functional characteristics of language. How are such categories as asking, directing, declaring, and rewarding to be discriminated? For example, the statement "would you like to continue, please" is in the form of a question yet may be designed to serve the function of a direction. The interrogative tone of the phrase could be a social convention or polite form for expressing an imperative. It could be argued then that the stimulus can only be understood in terms of the response it is designed to evoke. Carter _et al_. defined a unit quite vaguely in terms of changes in behavior. What constituted a change was not clearly specified, however. Thus their system is subject to the same difficulties found in the studies already mentioned.

Chapple (1940) hypothesized a relationship between temporal variables and emotional relationships among people. Although the relationship is hypothetical, Chapple's system has the advantage of not requiring the observer to make inferences about the behavior he is recording. Chapple's system includes such variables as tempo, activity or energy, adjustment, initiative, dominance, synchronization and flexibility all defined operationally in terms of temporal dimensions. Although Chapple does not report extensively on the reliability of his system, this general approach is the most objective work in process analysis and reliability coefficients are typically high. The best known example of this kind of approach in recent literature is the work of Matarazzo, Weitman and Saslow (1963). These authors use highly sensitive instruments to make very fine discriminations along temporal dimensions. Reliability is determined by the accuracy of voice activated relays rather than human factors. The obvious weakness of a time oriented approach is that it fails to preserve many response style variables and all content variables. Thus, although the approach is objective, it possesses only narrow psychological implications.

The system of Polansky, Lippitt and Redl (1949) consisted of a number of response style categories designed to study the process of behavioral contagion in a camp setting. The authors were interested in direct attempts at influencing, status indicators and incidents of contagion.

This system is worth noting because of the size of a unit necessary to be categorized as an incident of contagion. According to Heyns and Lippitt (1954):

> This particular category system illustrates more clearly than do some others the interdependence between category definition and unit designation. In the case of behavior entering the contagion categories, any act of a group member is potentially a contagion behavior. It becomes one in actuality, however, only when there is a change in the behavior of another person in the direction of the actor's behavior. (Heyns and Lippitt, 1954, p. 387)

This approach foresaw the current trend in the operant analysis of verbal behavior. In this approach, a behavior is defined in terms of its consequences. A verbal reinforcer, for example, can only be defined by an increase in the behavior it follows. The emphasis is clearly on function rather than topography. This approach provides an objective basis for determining if a behavior that appears on the surface to reflect some purpose or intent on the part of the actor actually serves the function for which it is designed.

Snyder (1945) developed a system to test certain tenets of the client centered approach of Carl Rogers. An attempt was made to describe psychotherapist behavior as directive, semidirective and nondirective, and client behavior in terms of simple responses, understanding or action-taking and feeling categories. This system suffers from the same difficulties faced by more comprehensive systems. It requires a high degree of inference and subjectively defines the verbal unit.

Dollard and Mowrer (1947) developed a measure known as the Discomfort-Relief Quotient (DRQ). The system was designed to detect drives and tensions in ongoing conversations. The DRQ was computed by dividing the number of expressions of discomfort by the number of discomfort plus relief expressions. The assumption of these authors that certain verbal behaviors reflect mentalistic events requires further empirical verification, however. Problems also exist in specifying the units entered into the ratio.

Freedman, Leary, Ossorio and Coffey (1950) developed a system called the "circle" which consists of a number of antagonistic verbs (e.g., dominate - submit). The system is designed to measure interpersonal mechanisms used in social situations. The system requires a high degree of inference, asking the observer to judge what an actor is doing to an object (e.g., aggressing, affiliating, etc.). One innovative feature of this system is that the intensity as well as the frequency of behaviors is rated. Unfortunately, it is difficult to obtain reliable results when applying a subjective rating to an already subjectively determined response category.

Mahl (1956) developed an interesting measure of anxiety and uncertainty in face-to-face interactions. He counted the frequency of speech disturbances in ongoing conversations. Categories consisted of failure to complete sentences, repetitions, tongue slips, incoherent sounds, stutters and omissions. A number of these categories are reasonably objective although omissions require some degree of inference to identify. Like the temporal systems of Chapple (1940) and Matarazzo _et al_. (1963) cited earlier, this schema fails to detect important response style and content variables. Mahl's approach does have the advantage, however, of measuring variables that possess a great deal of theoretical significance. One only has to recall the work of Freud in the area of speech disturbances to appreciate the value of an objective measure of their occurrence. Mahl's work merits further research, particularly in the setting of psychotherapeutic interviews.

Bandura, Lipsher and Miller (1960) developed a system to measure approach or avoidance and hostile or non-hostile behaviors. Their unit of analysis consisted of an interaction sequence, i.e., a behavior of one actor followed by a response to that behavior by another actor. A number of behavioral cues were listed to indicate the presence of approach or avoidance, e.g., approval and requests for elaboration (approach) or disapproval and silence (avoidance). Emphasis on a sequence of behavior rather than on one behavior at a given point in time is vitally important to the understanding of complex social interactions. Little has been done in this area since Polansky _et al_. (1949) defined a unit as a sequence of behaviors in their studies of social contagion cited earlier. The work of Bandura _et al_. appears to be a step in this necessary direction. Many problems remain, however. A particularly great dilemma is specifying to what elements of a highly complex verbal stimulus the verbal response is being made. Also, a response may not be made until a subsequent session. Some objective criteria must be developed to specify size limitations for a stimulus-response unit.

Jaffe (1961) has developed an objective system based on the "type - token ratio." Words serve as the unit of analysis. The ratio is computed by dividing the number of different words in a given segment by the total number of words for that segment. Thus, the system is a direct measure of repetitions and according to Jaffe an indirect index of defensive meneuvering and stressful disorganization. The latter hypothesis is tentative but like other non-content systems, this technique at least enjoys a high degree of objectivity and reliability. Repetitiveness is a characteristic of verbal behavior that is encountered frequently and is undoubtedly of theoretical significance. Jaffe's contribution thus appears to be a valuable one.

The already classic work of Greenspoon (1962) offers another approach to process analysis. In this case, a response of one member of a dyad is determined prior to the session. Greenspoon selected the responses "good" and "mmm-hmm." Observers then studied the effect of these responses on speech characteristics of the person to whom the responses are directed. Both response style and content variables have been found to vary as a function of verbal reinforcement. The verbal conditioning work of Greenspoon yields data on the function of speech under carefully controlled conditions. It has the drawback, however, of interfering with conversations as they occur spontaneously in a natural environment. It could be argued, however, that the very presence of observers already modifies verbal behavior and that the experimental approach at least specifies the direction and extent of external influences. Greenspoon's approach is clearly valuable but further work is necessary on the specification of complex verbal stimuli in order to better simulate natural conditions.

Reece and Whitman (1962) are representative of an approach to process analysis that does not deal with verbal behavior. In their investigations of psychotherapy sessions, they distinguished between warm and cold therapists on the basis of certain motor behaviors. Warm therapists, for example, were defined as those who leaned toward the client, looked directly at him and smiled. Cold therapists were defined as those who leaned away, drummed fingers and looked across the room. This is a valuable approach in that certain non-verbal behaviors can influence interactions as easily as verbal style and content. Reece and Whitman found, for example that "warm" therapists increased verbal productivity. This approach is not entirely objective, however. Eye contact, for example, is very difficult for observers situated at different angles from the actors to rate reliably. Certain gross motor behaviors can be easily observed, however, and provide a useful supplement to data on verbal behavior.

Russell and Snyder (1963) provide a good example of a process system based on both content and non-content variables. They were interested in measuring anxiety in therapy situations. Included in their system were direct statements of anxiety, apologies for faults, changing the subject, and intellectualization as well as a number of speech disturbances similar to those investigated by Mahl (1956). Although Russell and Snyder's work suffers from some of the same difficulties found in other works, it is to be commended for adopting a variety of approaches to process analysis. In order for non-content variables to be meaningful, they should be measured in conjunction with content variables. Only in this way will the field of process analysis be able to converge on an empirically valid approach to the understanding of complex human interactions.

The studies cited above are only a small sample of efforts that have been made in this area. The sample is sufficient, however, to illustrate a number of dilemmas facing process analysts. These are reviewed below.

Summary of Dilemmas in Process Analysis

Most of the dilemmas in process analysis center around interjudge reliability. Reliability data have not been presented above because the results of most of the studies are highly similar. Thus, the reliability of these systems can be considered collectively. In general the systems cited above possess reliabilities between 50 and 85 percent agreement. These reliabilities are quite poor considering the high degree of training required to obtain such results. Only the non-content approaches have fallen within an acceptable range of interjudge agreement but as stated earlier, these systems possess only limited validity to date. Low reliabilities are the result of the following dilemmas:

1. Generality vs. specificity. Should process variables be defined broadly to detect a wide range of behaviors or should they be made highly response specific? Extremes in either direction produce low reliability. The former approach requires inference, the latter leads to the generation of too many categories thus dividing the observers' attention too finely.

2. Objectivity vs. inference. This is intimately related with the issue of generality vs. specificity. Even categories that are fairly specific, however, can require a high degree of inference. In general the greater the degree of inference required, the lower the reliability.

3. Molar vs. molecular single units. Should the unit of analysis be a phoneme, a syllable, a word, a phrase, a sentence or a paragraph? Can a unit be defined grammatically or should some rational criterion be adopted, for example, a "complete thought" regardless of grammatical structure? Or should the unit be arbitrarily defined in terms of a temporal interval? In general, molecular units can be detected reliably with the proper instrumentation but are of only limited validity. As units become more molar, however, validity is restricted by decreased reliability.

4. Single vs. sequence units. Should a unit be defined as the response of a single actor or should the interaction between actors be taken into account? The former approach leads to errors of inferring function; the latter requires objective evidence of function but provides a larger and hence less reliable unit of analysis.

5. Broad vs. narrow applicability. Again this relates to the issue of generality vs. specificity but views the problem between rather than within sessions. Can a set of categories, regardless of their generality or specificity within one setting be applied to situations in different settings? Or should a new set of categories be constructed for each new situation? The former approach is molar and less reliable, the latter retards progress toward the legitimate scientific goal of generalization of results.

6. Response style vs. content variables. This is really not an either/or dilemma although the literature has appeared to dichotomize the two. Clearly both kinds of variables should be taken into account within the same studies.

7. Contextural vs. immediate cues. Once a unit of analysis has been specified, should the observer make judgments only on the basis of cues within that unit or should he retrieve the context in which the unit occurred? The former approach is more objective but eliminates valuable data. The latter may be more meaningful but requires inference that diminishes reliability.

8. Topography vs. function. In general should units be categorized or rated on the basis of their topography or form or should some judgment be made on the basis of the function they serve? If the latter, should the judgment be made on a rational or empirical basis? Ratings based on topography may be more reliable but a functional analysis may possess greater validity.

Potential Solutions

The studies reviewed above not only pose dilemmas but suggest solutions as well. In reviewing content-analysis studies of psychotherapy, Auld and Murray (1954) stated that:

> Content systems are inevitably criticized for what they leave out. The practicing clinician often feels that the measured part of the therapeutic transaction is pitifully small alongside the complex of stimuli that he senses as a participant observer. Yet it seems unfair to expect any single content analysis system to describe all of this complex situation. We would probably make a fairer appraisal of content systems if we expected each system to deal with only a part of this complexity. (Auld and Murray, 1954, p.)

It is clear from Auld and Murray's comment that the lack of comprehensiveness of a single system is inevitable. A simple solution suggested by Russell and Snyder (1963) is to describe the same therapy sample through a number of systems, each contributing to the understanding of a part of the process. We should therefore focus on both content and style, single units and a sequence of units, topography and function.

The dilemma of whether to select a rating or category technique and the related issues of generality vs. specificity, objectivity vs. inference and molar vs. molecular units finds a potential solution in the work of Fouriezos, Hutt and Guetzkow (1950). They combined categorization and rating tasks in an attempt to generate results that were both objective and global.

The problem of specifying unit size and context is illuminated by the following remarks of Marsden (1965):

> Discussions of content-analysis methodology tend to treat the problem of unit and category selection as relatively unrelated issues... While specific category systems were developed, presumably because of their relation to the research problem, choice of units has often reflected only the need to divide communication material into segments in systematic fashion. Infrequently have investigators argued for their choice of a unit in terms of its logical or psychological relation to either the category structure or the question under investigation (Marsden, 1965, p. 315).

An initial step to solve the problem described by Marsden was taken by both Bales (1951) and Heyns (1948). These authors attempted to define a unit in terms of its meaningfulness to an observer trained in the use of certain categories. Although this approach is circular, it does attempt to specify units according to their psychological significance. A better approach would be to determine units on the basis of their meaningfulness to individuals not involved in the final rating, preferably psychotherapists sensitive to a broad range of variables relevant to the therapeutic process.

How these potential solutions might be incorporated into a novel approach to process analysis is the topic of the next section.

Development of a Process System

Selection of Variables

There are two basic approaches to the development of a system of process analysis. The first is a deductive approach reflected in the following passage from Bordin, Cutler, Dittman, Harway, Raush and Rigler (1954):

> Testing the adequacy of theories of psychotherapy has been the task of clinical research for many years, but only recently have we begun to examine our methods for doing it. To test these theories, we must first identify those concepts which the theorists say are important and translate the concepts into dimensions or variables which are amenable to systematic analysis. Next, we must carry out the analysis of the variables in such a way as to tell us something about the relative merits of the theories from which the variables were derived in the first place (Bordin _et al_., 1954, p. 79)

Kiesler (1966) has rejected this approach, stating that neither Freudian, Rogerian or behavior theories provide adequate research paradigms. He favored the inductive approach reflected in the call of Meehl (1955) for "maximum experimentalism" cited earlier.

In determining which approach to follow in the present study, no clearly defined theoretical position from which to derive variables was available. The non-operant consultation was generated from an eclectic orientation whereas the operant approach developed out of the essentially atheoretical position of B. F. Skinner. In addition, consultation itself is a fairly new process relative to traditional psychotherapy and thus possesses fewer ties with specific theoretical systems. Thus an inductive approach appeared appropriate with the selection of variables based more on their face validity than on their prominence as theoretical constructs.

Variables were derived from two sources:

1. Selected studies from the psychotherapy research literature, and

2. Discussions among Parent Project policy makers concerning variables relevant to therapeutic outcome.

Variables from the Psychotherapy Research Literature

A number of variables were derived from a revised form of the Therapist Orientation Questionnaire (TOQ) developed by Kline (1968). This instrument contained items designed to discriminate between behaviorally and dynamically oriented therapists and was filled out after each treatment period by the Parent Project consultants. Among the dimensions considered by the TOQ were therapist planfulness, activity level, warmth or detachment, directiveness, feelings of security and attitudes regarding specific therapeutic techniques, e.g., psychoanalytic dream interpretation.

Strupp (1957) in an attempt to describe Rogerian and Psychoanalytic approaches to therapy specified focus on past or present events as an important dimension. Focus on future events might also assume relevance to the present study as an index of the extent to which parents formulate treatment plans for their children. Operant consultation has generally been characterized as focusing on present events without concern for etiology, while many non-operant approaches traditionally explore developmental history (focus on past events). Ideally, both forms of consultation emphasize planning for the future.

The distinction of Waskow (1962) between feeling and content statements might also discriminate between the two forms of consultation. Non-operant consultation might be expected to focus on the expression of feeling while an operant approach might emphasize content.

Depth of interpretation, (Harway, Dittman, Raush, Borden and Rigler, 1955), concreteness (Truax and Carkhuff, 1964) and specificity level (Pope and Siegman, 1962, 1965) are related dimensions which might be important to consider in the present study. Non-operant approaches are typically considered to be more interpretive and less concrete and specific in terms of overt responses than operant consultation.

Variables Derived from Discussions of Therapeutic Outcome

Recalling the comments of Kiesler (1966) regarding the interrelationship of process and outcome data, it seemed relevant to incorporate the same dimensions into a system of process analysis that were of concern in the evaluation of therapeutic outcome. These variables were derived from discussions held by the Parent Project policy committee. A particularly fruitful source of variables was a meeting with Dr. Evelyn F. Hill who has been assigned the task of evaluating projective and objective test protocals administered to the parents during the three measurement periods. (See her paper which is a part of this report.) The question before the meeting was essentially one of outcome: What changes in the parents' behavior were expected as a result of treatment? The dimensions considered relevant to this question were the relationship between the parents, passive-aggressiveness, self esteem, hostility, reality orientation, affect, tolerance for stress, guilt, responsibility, optimism, anxiety, cognitive integration, affectional needs, attitudes toward the child, defensiveness and psychopathology. These dimensions appeared relevant to parents' verbal behavior, whether in the form of test responses (outcome data) or intratherapy dialogue (process data).

Selection of Techniques

With a general notion of the variables of interest, the next problem was to specify a technique for their measurement. Although a category system would provide a valuable description of the sequence of events, the breadth of the variables under consideration suggested the more global approach of a rating scale with its larger unit of analysis. In order to preserve some record of specific events in time, a compromise between rating and category techniques was reached. It will be recalled that Fouriezos *et al.* (1950) required observers to make category judgments which then contributed to the assignment of values along a rating scale. The present technique reversed this procedure. Observers were required to make global ratings and then to identify the specific events which contributed to each rating. In short, observers had to provide behavioral evidence for their subjective evaluations.

Bordin *et al.* (1954) pointed out a difficulty in rating scales, namely that they *force* data into unidimensional continua. In order to develop a system with at least two dimensions, the semantic differential technique of Osgood, Suci and Tannenbaum (1951) was selected. This technique was used successfully in the analysis of therapeutic process by Pope and Siegman (1967).

Since rating scales tend to be more descriptive of response style than content, an additional category system consisting of content variables was planned.

The size of the unit of analysis in the present study was in part dictated by practical considerations. The use of psychology advanced undergraduates as raters necessarily restricted the amount of rating that could be reasonably asked as part of a student's course requirements. It was determined that a maximum of 4 hours was available to rate 24 hours of consultation tape. Thus, some sampling procedure was indicated. Sampling on some arbitrary basis would have violated the principle of specifying psychologically meaningful units. Within certain practical limits, it was ideal for samples to be chosen by experts. Drs. Leopold Walder, Stanley Pavey and Dennis Breiter, in their roles as therapeutic supervisors, were perhaps best acquainted with the nature of the treatments under investigation. Thus, they formed an ideal group to select relevant units of analysis representative of the consultation process.

In specifying a unit of analysis for a category system, it seemed important to describe those statements of parents verbally maintained by consultants. This would include statements *immediately* preceding verbal reinforcement or *immediately* following consultants' questions or directions. The size of the unit of analysis was limited to a grammatical sentence to satisfy the criterion of immediacy. Potential reinforcers were identified on the basis of their topography. The present study should provide evidence of what functions they served, if any.

Description of the Rating Scale

The following semantic differential scales were developed to incorporate the variables under consideration. Since raters were relatively inexperienced undergraduates, variables were expressed in non-technical language. The polarity of potentially favorable and unfavorable adjectives was randomly reversed to minimize response sets associated with extreme scale positions such as the set likely to occur as a result of halo effects.

There was less concern over potential mid-point response bias which generally occurs among poorly reinforced raters. In the present study, adequate reinforcement was planned to minimize the probability of careless responding. Thus, it was not necessary to present an even number of scale points in order to prevent raters from arbitrarily selecting the mid-point. With adequate reinforcement, an odd number of scale points is preferable to allow for neutral responses when they are appropriate. The selection of 7 scale points has generally produced satisfactory results in other uses of the semantic differential technique. There was no *a priori* basis for assuming that this number of points would be inappropriate for the task at hand.

Semantic differential scales are presented in Tables 2a and 2b. In Table 2a are the scales for rating consultant behaviors and in Table 2b are the parent behavior scales. Seven of the 22 adjective pairs of the semantic differential scales are identical for consultants and parents. The purpose here was to afford an opportunity for direct comparisons of consultants and parents along the same dimensions as a function of time in treatment.

Insert Tables 2a and 2b about here

Description of Category System

Grammatical sentences immediately preceding verbal reinforcers or immediately following questions or directions of the consultant are categorized as follows: (definitions immediately after):

General Response Type:

1. Public or Not Public
2. Behavioral or Not Behavioral
3. Feeling Statements, Use of Operant Terminology or Other
4. Focus on (a) Distant Past, (b) Immediate Past, (c) Present, (d) Near Future, (e) Distant Future, (f) Other

TABLE 2a

Semantic Differential Items: Consultant Variables

uncertain	:___:___:___:___:___:___:___:	confident
general	:___:___:___:___:___:___:___:	specific
rash	:___:___:___:___:___:___:___:	cautious
skillful	:___:___:___:___:___:___:___:	unskillful
fast	:___:___:___:___:___:___:___:	slow
strict	:___:___:___:___:___:___:___:	permissive
active	:___:___:___:___:___:___:___:	passive
involved	:___:___:___:___:___:___:___:	deteched
pleasant	:___:___:___:___:___:___:___:	unpleasant
warm	:___:___:___:___:___:___:___:	cold
concrete	:___:___:___:___:___:___:___:	abstract
outgoing	:___:___:___:___:___:___:___:	reserved
vague	:___:___:___:___:___:___:___:	precise

TABLE 2a (Continued)

hard :____:____:____:____:____:____:____: soft

confused :____:____:____:____:____:____:____: organized

accepting :____:____:____:____:____:____:____: rejecting

subjective :____:____:____:____:____:____:____: objective

critical :____:____:____:____:____:____:____: supportive

direct :____:____:____:____:____:____:____: indirect

tense :____:____:____:____:____:____:____: relaxed

TABLE 2b

Semantic Differential Items: Parent Variables

interested	:___:___:___:___:___:___:___:	indifferent
competitive	:___:___:___:___:___:___:___:	cooperative
vague	:___:___:___:___:___:___:___:	precise
friendly	:___:___:___:___:___:___:___:	hostile
independent	:___:___:___:___:___:___:___:	dependent
confused	:___:___:___:___:___:___:___:	organized
hopeful	:___:___:___:___:___:___:___:	pessimistic
subjective	:___:___:___:___:___:___:___:	objective
realistic	:___:___:___:___:___:___:___:	unrealistic
tense	:___:___:___:___:___:___:___:	relaxed
complaining	:___:___:___:___:___:___:___:	agreeable
feels free	:___:___:___:___:___:___:___:	feels inhibited
uncertain	:___:___:___:___:___:___:___:	confident

TABLE 2b (Continued)

love their child	:___:___:___:___:___:___:___:	hate their child
rigid	:___:___:___:___:___:___:___:	flexible
skillful	:___:___:___:___:___:___:___:	unskillful
feels guilty	:___:___:___:___:___:___:___:	free of guilt feelings
logical	:___:___:___:___:___:___:___:	irrational
active	:___:___:___:___:___:___:___:	passive
warm	:___:___:___:___:___:___:___:	cold
low self esteem	:___:___:___:___:___:___:___:	high self esteem

Specific Response Content:

5. Pertains to original concern about child. (Specify the area of concern)

6. Pertains to child but not included under #5.

7. Pertains to Parents: (a) Procedures; (b) Relationship; (c) Other

8. Miscellaneous short responses: (a) Simple affirmation; (b) Simple negation; (c) Statements of uncertainty about the stimulus; (d) Statements of uncertainty about the response; (e) Other

9. Statements of (a) Positive or (b) Negative Outcome, or (c) Other

10. Uncodable responses: (a) Inadequate stimulus materials; (b) Inadequate response alternatives (c) Other. Please Specify

Category Definitions:

1. Public or Not Public. A statement is classified public that refers to an event whose occurrence could be easily agreed upon through direct observation by two or more independent observers, for example, "It is raining." A statement is classified not public that refers to an event whose occurrence could not be agreed upon by two independent judges without recourse to inference, for example, "Mary is thinking."

2. Behavioral or Not Behavioral. A statement is classified behavioral when it refers to a publicly observable response on the part of a human or animal organism, for example, "Johnny is crying." A statement is classified not behavioral when it refers to some aspect of human or animal events that is not publicly observable such as a mental or feeling state, for example, "Mary is sad." Statements referring to publicly observable stimulus events are also classified not behavioral, for example, "The light turned red."

All statements classified as behavioral are by definition public as well. Statements that are classified public may be behavioral or not behavioral, however. Although there are only three possible combinations of these categories, pilot research revealed that separate judgments along two different continua could be made more efficiently than one decision among three multidimensional categories.

Generic terms referring to behavioral events such as the terms "behavior" or "response" are considered behavioral. Generic terms referring to non-behavioral events such as the terms "feelings" or "thoughts" are scored not behavioral.

When it is unclear whether a statement is either public or behavioral, it should be scored not public and not behavioral. The definitions of the former categories preclude ambiguity. *Public* and *behavioral* events are obviously so. If inference is required to make a judgment, if subtleties need to be detected, then the statement does not refer to clearly observable events.

When statements contain a number of referents, if any referent is *public* and if any is *behavioral*, score the entire statement as *public* and/or *behavioral*, for example, "He is thinking about it and laughing aloud." Although this arbitrary rule may detract from validity, pilot research suggested that it is necessary for reliability. The only alternative would be to split the statement into more molecular units on sume subjective and hence unreliable basis.

3. *Feeling Statements and the Use of Operant Terminology*. This distinction is more specific than the feeling-content dichotomy proposed by Waskow (1962). *Feeling Statements* are defined by the presence of specific "feeling words" for example, "happy," "sad," "anxious" or "angry." Feeling is never to be inferred from non-lexical characteristics of therapeutic dialogue or from verbal behavior that is less than explicit. A particular subset of content statements with particular relevance to the present study deals with the *use of operant terminology*. Again, the category is defined by the presence of specific words, in this case words like "reinforcement," "shaping," "fading," "extinction"...etc. Raters should be sufficiently familiar with such terms from their undergraduate training so that a list of operant terms need not be provided. If a statement cannot be categorized under the above, it should be classified as "other."

4. *Focus on Distant Past, Immediate Past, Present or Future*. Statements clearly referring to events prior to consultation from the Parent Project are defined as (a) *Focusing on the Distant Past*. Statements referring to events in the past occurring within the time span of the family's contact with the Parent Project are defined under (b) *Focus on the Immediate Past*. Statements referring to events within the current consultation session are defined as (c) *Focusing on the Present*. (d) *Focus on the Near Future* pertains to statements referring to future events foreseen in the weeks prior to the termination of consultation, for example, statements referring to parents' execution of their assignment for the coming week. (e) *Focus on the Distant Future* pertains to statements referring to events foreseen beyond the 12 or 24 week treatment period, for example, statements about sending the child to school in the next Fall. If it is ambiguous as to which of the above categories is appropriate, score (f) *Other*.

5. *Pertains to original concern about child*. Prior to consultation, parents were required to list behaviors they wanted to increase or decrease in their child. The following areas of concern were derived from the exact words used by the parents in generating these lists. Statements containing these words or words clearly synonymous with areas of original concern are classified under the above category.

The rater is to specify which area of concern is being discussed and more than one area can be scored for a given statement.

Areas of concern are listed for each family in Table 3.

Insert Table 3 here

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6. *Pertains to child but not included under #5*. If a statement clearly refers to the child but does not deal with any of the areas of concern listed in Table 3, classify it under Category #6.

7. *Pertains to parent.* If a statement refers to *procedures* a parent is to carry out in working with the child, classify it under (a) *Pertains to parent - procedures*. If it refers to the relationship of one parent to the other, classify the statement under (b) *Pertains to parents - relationship*. If a statement does not clearly fall into either of the above categories, score (c) *Other*.

8. *Miscellaneous short responses*. Some statements preceding a verbal reinforcer but particularly following a question or direction from the consultant will be in the form of a short response. Classify these as follows: (a) Simple affirmation, e.g., "yes" or "hmm-mmm." (b) Simple negation, e.g., "no." (c) Statements of uncertainty about stimulus, (i.e., the parent states that he does not understand the consultant or requests the consultant to repeat himself.) (d) Statements of uncertainty about the response, e.g., "I don't know" in response to a question. (e) Other.

9. *Statements of Positive or Negative Outcome*. (a) *Positive Outcome* is to be scored only when words of improvement are explicitly stated, e.g., "Johnny is throwing fewer tantrums" or "Mary is doing better." Conversely, (b) *Negative Outcome* is scored only when deteriorating conditions are described. If the statement is neutral or ambiguous with respect to positive or negative outcome, score (c) *Other*.

10. *Uncodable Responses*. In order to evaluate the quality of data as well as the efficacy of the measuring instrument, responses that are uncodable should be categorized under the following: (a) Inadequate stimulus materials. This category is to be scored if the unit of analysis is not a grammatical sentence or if what is heard on the audio tape does not correspond with what is written on the typescript. (b) Inadequate response alternatives. This category is to be scored when the stimulus materials are adequate but the category definitions do not clearly specify how the unit of analysis is to be scored. The rater should specify by number which category definition is at fault. (c) Other. Please Specify. The rater should describe any other difficulty encountered during the rating task, for example, equipment breakdown or rater fatigue.

TABLE 3

Areas of Parental Concern About Child

Family E:

1. talking
2. initiative in play
3. awareness
4. respond and understand people
5. reasoning powers
6. initiative of actions
7. making himself understood
8. saying if he doesn't understand
9. acceptance of new situations
10. conveying his anger toward the right person

Family A:

1. speech
2. bowel movements
3. play with other children
4. "turns off the world"
5. table habits
6. play with boyish toys
7. temperamental.

Family C:

1. stubbornness
2. strong self will
3. constant need for attention
4. loudness and assertiveness

TABLE 3 (Continued)

Family C (Continued)

5. bad language
6. independence
7. following schedule and routines
8. obeying
9. cooperativeness with family
10. thoughtfulness

Family I

1. toilet training
2. speaking
3. become part of family
4. play correctly with toys
5. take instructions
6. clapping hands and objects
7. whooping
8. rocking and humming
9. dressing self
10. development of readiness for school
11. playing with other children
12. independence

Family B

1. talking
2. playing with other children
3. destructiveness
4. toilet training

TABLE 3 (Continued)

Family B (Continued)

5. obeying
6. complaining
7. temper
8. crying
9. dressing
10. table manners
11. calmer
12. habit of hurting others

Family D

1. irrational complaints
2. calm down
3. become adjusted to school
4. rest
5. stick to what he's doing
6. stomach sickness
7. interest or liking for school
8. do house chores
9. better concentration
10. responsive to verbal instructions
11. group participation
12. carefulness in school work
13. hurry in work
14. spilling food on floor

TABLE 3 (Continued)

Family G

1. screaming - undesirable sounds
2. wet at night
3. wandering
4. peculiar hand motions
5. repetitive activity
6. normal conversation
7. successfully aggressive behavior
8. inventiveness in play
9. attention to difficult tasks
10. asking for help
11. tolerance of loud grinding sounds

Family F

1. communicate verbally
2. dislike of noise or any other disturbance
3. rocking
4. inability to sit still and show interest for any length of time
5. gathering small objects (e.g., stone or leaf) and plays with them on knees.
6. play in a normal way
7. attentiveness
8. making progress he is capable of

TABLE 3 (Continued)

Family H

1. detachment
2. head nodding
3. pretending
4. drama playing
5. easily distracted
6. concentration when learning
7. attention to surroundings
8. relating to others
9. willingness to try new things

Summary

How do the present systems attempt to resolve some of the dilemmas in process analysis? Some tentative answers are outlined below:

1. Generality vs. Specificity. The major attempt to resolve this dilemma was to incorporate a general rating task with specific category judgments. Although the semantic differential variables are global, specific behavioral evidence is required to justify each rating.

2. Objectivity vs. Inference. Requiring behavioral evidence for subjective evaluations was expected to enhance the objectivity of the rating scale. Category judgments were made more objective by defining categories in terms of the occurrence of specific word classes. The process of inference itself was used to define the public-not public and behavioral-not behavioral alternatives. Raters were instructed that the necessity for inference on their part indicated that the statement under construction did not clearly describe public and behavioral events.

3. Molar vs. Molecular Units. This dilemma was resolved in two ways. For the rating scale, molar units were selected on the basis of their significance to therapeutic supervisors. The present study thus avoided specification of units on some arbitrary basis. A more molecular unit was specified for the category system but it was selected on the basis of its temporal relationship to consultant's questions, directions, and verbal reinforcement. Thus, although the unit was small, the probability of its significance was greatly increased.

4. Single vs. Sequence Units. The molar units presented to observers using the rating scale incorporated a considerable sequence of events. The units associated with category judgments were single units but were selected on the basis of their sequence with certain consultant behaviors considered important on a priori grounds.

5. Broad vs. Narrow Applicability. The present (rating and category) systems contained variables of unique interest to the Parent Project as well as variables with much broader implications. Examples of the former are the use of operant terminology, the particular areas of parental concern and the procedure-relationship dichotomy pertaining to the parents. Variables of broader interest include the semantic differential continua, the public-not public and behavioral-not behavioral dichotomies, focus on distant past, immediate past, present, near future, and distant future, miscellaneous short responses and statements of positive and negative outcome.

6. Response Style vs. Content Variables. The present systems include both stylistic and content variables. Response style variables are represented among the semantic differential items while content variables are found in items 5 through 9 of the category system.

7. Contextural vs. Immediate Cues. No provision for retrieving contextural cues was made. The method of specifying the units of

analysis described above insured, however, that the segments under consideration were particularly meaningful in themselves.

8. Topography vs. Function. The rating system described units of analysis functionally in terms of their contribution to subjective evaluations on the past of the rater. The category system on the other hand defined statements on the basis of their topography. This system was designed, however, to specify what functions, if any, were served by certain responses of the consultants.

Although the present systems by no means solve all of the dilemmas in process analysis, it is believed that they incorporate necessary and important steps in the right direction.

Method

Technical Problems

Recording the Sessions

Under original plans of the Parent Project provisions were made for on-the-scene ratings of live consultation sessions. This was accomplished by placing raters in a central observation room equipped with one-way mirrors. Observers monitored parent-consultant interactions through the same audio equipment used in providing permanent tape recordings of the consultation sessions. Since raters were required to make judgments at regular intervals, a tone was sounded every thirty seconds and superimposed on to recordings of the sessions. Unfortunately, this procedure detracted from the fidelity of these tapes and this made the task of *post hoc* analysis more difficult. The attempt to generate data from on-the-scene ratings led to other difficulties as well. Frequently there was insufficient space for both observers and recording equipment which contributed to instances of equipment failure. In addition, congestion in the observation room was, at times, distracting to consultants and parents. In general, on-the-scene ratings failed to provide reliable data. Even if results had been reliable, raters' familiarity with the type and time of treatment would have been a potential source of bias. These problems suggest that in future research, the first concern should not be to immediately generate usable data, but rather to simply record sessions with maximum accuracy and minimum distraction to participants.

Selection of Tapes for Analysis

In order to describe any changes in the consultation process as a function of time, the second and next to last sessions of each consultant in both treatment periods were selected *a priori* for analysis. The first and last sessions were considered less appropriate due to a probable atypical emphasis on procedures and social pleasantries connected with saying hello and good-bye.

In Treatment Period I, the next to last session was the 11th meeting in 11 calendar weeks. In Treatment Period II, the next to last session also occurred during the 11th week of treatment but was only the 10th meeting between parents and consultants.

A few difficulties arose in the selection of tapes. On two occasions, the next-to-last session was conducted by a supervisor rather than the original consultant. In another case, the parents were absent from a scheduled meeting. The decision was made to select the second from the last scheduled session in these instances. This was successfully accomplished in two of the three cases. Unfortunately, one of these sessions was not recorded due to equipment failure. In this case, rather than selecting a session separated by two weeks from the next-to-last meeting, the last session was selected. The tapes finally selected are reported by treatment period, consultant, family, session and week number in Table 4.

Insert Table 4 here

Selection of Media for Rating

The low reliability of on-the-scene ratings suggested that judgments concerning processes as complex as parent consultation are difficult to make over short periods of exposure to the stimulus material. In a pilot study, on-the-scene observers were asked to make judgments at 30 second intervals along five dimensions: actor (consultant, mother or father); sentence type (declarative, interrogative or imperative); public or not public and behavioral or not behavioral as defined in the present category system and acceptance or rejection, i.e., whether the statement was immediately followed by verbal reinforcement or punishment. Although this category system was considerably less complex than the present system, inter-judge agreement over 24 consultation sessions was only 85.3% (actor), 85.0% (sentence type), 76.7% (public/not public), 70.4% (behavior/not behavior), 81.2% (acceptance/rejection) and 79.7% overall. These results were entirely inadequate given the limited range of alternatives per judgment. The fact that observers agreed only 85% of the time on the actor suggests that in many cases, different units of analysis were evaluated. This could easily occur when the 30 second interval began at a time when more than one actor was speaking or during a period of rapid transition from one actor to another.

In order to objectively determine the unit as well as to provide sufficient exposure time for observer judgments, it was decided to prepare typed transcripts from the original tape. Since non-lexical characteristics such as intonation and rate of speech might contribute to certain ratings, particularly those dealing with affect, it was further decided to play the original audio tape to the rater while he followed the dialogue in a written text. It is hoped that these procedures would improve interjudge agreement despite the increased complexity of the rating and categorization tasks.

TABLE 4

Final Selection of Tapes for Analysis

CONSULTANT	FAMILY	TREATMENT PERIOD	SESSIONS	WEEKS
A	1	I	2, 11	2, 11
	4	II	2, 10	2, 11
B	2	I	2, 11	2, 11
	5	II	2, 10	2, 11
C	3	I	2, 10	2, 10
	6	II	2, 10	2, 11
D	4	I	2, 11	2, 11
	7	II	2, 10	2, 11
E	5	I	2, 12	2, 12
	8	II	2, 10	2, 11
F	6	I	2, 11	2, 11
	9	II	2, 9	2, 9

Transcription of Tapes

The problems encountered in transcribing tapes are best described in the following passage of Bordin et al. (1954):

> ...a belief has developed that electrical recording guarantees objectivity in research on interview material. Unfortunately, we have not always found this guarantee to hold. Informal studies of inter-typist agreement in transcribing interviews indicate that objectivity is highly dependent on the quality of the original tapes. Even good tapes are to some extent projective techniques for typists, raising questions which may be interesting in themselves, but not helpful to research in psychotherapy. In some cases we found complete reversals of meaning in therapist or patient statements from one typist to another...(Bordin et al., 1954, p. 81).

As indicated earlier, equipment difficulties detracted from the fidelity of some consultation tapes. Thus, the task of transcription could become even more of a "projective technique" for typists. In order to minimize potential bias, typists are encouraged to label unclear passages as "garbled" rather than to guess at what was said. All typescripts are proofed against the original tape by persons other than the original typists. Despite these precautions, some errors are bound to persist. Playing the audio tape along with the typescript to raters will minimize the possibility of complete reversals in meaning, however.

Defining the Units

Rating Scale Units

Completed transcripts of consultation sessions are submitted to Drs. Walder, Pavey and Breiter. Each receives only those transcripts of sessions which had been conducted under their direct therapeutic supervision. Transcripts are divided into segments corresponding to 2½ minutes of actual consultation time (roughly one page of typescript). The supervisors are instructed to select three segments from each session which best reflect their approach to consultation in the Parent Project. One segment is to be selected from each third (roughly 20 minutes) of a given session. Finally, the grammatical sentences comprising each segment are numbered. Segments serve as the units of analysis for semantic differential ratings. Sentences serve as reference points when raters were asked to provide behavioral evidence for their evaluations. A total of 72 segments have been selected (3 from each of the 24 sessions listed in Table 4) representing 3 hours of actual consultation time.

Category System Units

Two independent judges are asked to classify each statement of consultants in the 24 sessions under investigation as a direction, question, verbal reinforcer, or other. Statements classified under one of the first three categories by both judges are identified in the typescript. The grammatical sentences immediately following directions and questions and immediately preceding verbal reinforcers are bracketed and numbered. These serve as the units of analysis for category judgments.

In addition to identifying consultants' responses that potentially maintain the verbal behavior of parents (questions, directions, and verbal reinforcement), it would be profitable to identify responses that potentially weaken certain categories of the parents' verbal behavior. Such responses on the part of the consultant might include changing the topic, maintaining silence at the conclusion of a statement from the parents, interruption and overt rejection.

Procedure

Selection of Raters

Sixty students currently enrolled in a course in psychology are selected to make semantic differential ratings. It was assumed that students at this level possess some interest in psychology; this is important in order to provide adequate reinforcement for their behavior as raters. At the same time, however, they are not expected to be so sophisticated that they would read highly technical meanings into the semantic differential items or readily identify particular theoretical orientations of consultants.

To implement the category system, three students with a more substantial undergraduate background in psychology, and enrolled in a course of independent research, are selected as judges. Familiarity with the general approach of behaviorism as well as specific operant terminology is considered important to make judgments under the present category system. To supplement their background, judges are asked to read the texts of Reese (1966) and Holland and Skinner (1961).

Reinforcement of Raters

Students are informed that credit toward their course grades could be added on the basis of their rating performance. Raters are told that the quality of their work could be evaluated through their agreement with independent judges. Raters are reassured, however, that careful attention to the stimulus material and the use of common sense are all that is required to produce reliable results.

Presentation of Stimulus Materials

Seventy-two segments of consultation sessions are presented to raters using the semantic differential scales. The sequence of segments has been only partially randomized. The 1st, 7th, 13th, 19th, 25th, 31st, 37th, 43rd, 49th, 55th, 61st and 67th positions in the series are filled with segments of sessions with different consultant-family pairs. It was decided to fill these positions with the middle segment from the parents' second meeting with each new consultant. The remaining segments have been ordered randomly with the limitation that no consultant-family pair could appear twice in the series until all other pairs had intervened.

The 60 raters are randomly assigned to 12 groups of five each. Each group is assigned to begin rating the series at one of the 12 different points mentioned above and to continue rating in sequence until all segments have been completed. Table 5 below presents the partially randomized sequence of segments.

Insert Table 5 Here

The purpose of presenting segments from different families to each group initially is to control for the potential effect of an initial stimulus in a series acting as a standard of comparison for all subsequent stimuli.

After each segment has been presented, raters are required to make judgments along the semantic differential scales. When these ratings have been completed, raters are further asked to specify (indicating the sentence number) the words of consultants or parents which were chiefly responsible for their assignemnt of each scale value. If the rating were based principally on some non-lexical characteristic of the interaction, raters would be required to specify the non-verbal stimulus (e.g., intonation, speech rate, etc.). Raters are permitted to provide both lexical and non-lexical evidence for their evaluations. If raters were not able to locate specific evidence, an alternative labelled "uncertain" is to be checked.

Rating is conducted in three sessions over a 3-week period. Twenty-seven segments are presented in each session. Only one group of raters is run at a time and students are cautioned against speaking to other raters about the project prior to its completion. Table 6 identifies the segments presented to rater groups in each session.

Insert Table 6 Here

Judgments under the present category system are concerned with the frequency rather than the amplitude of behaviors. Some judgments of this type are more likely to be absolute than relative, the initial stimulus in the series is less critical. Thus, the 24 complete transcripts and tapes are presented in the same partially randomized

TABLE 5

Sequence of Segments

#	Family	Treatment Period	Session	Third	#	Family	Treatment Period	Session	Third
1.	1	I	2	2	37.	5	II	2	2
2.	3		10	1	38.	4	II	2	3
3.	6	II	10	1	39.	6	I	11	1
4.	8	II	10	3	40.	2	I	11	1
5.	9	II	2	3	41.	7	II	2	1
6.	5	I	2	3	42.	8	II	10	2
7.	6	I	2	2	43.	4	I	2	2
8.	5	II	10	3	44.	6	II	10	2
9.	2	I	11	3	45.	3	I	2	1
10.	4	I	11	1	46.	9	II	9	2
11.	7	II	2	3	47.	5	I	12	2
12.	4	II	2	1	48.	1	I	2	1
13.	7	II	2	2	49.	3	I	2	2
14.	4	II	10	1	50.	5	II	10	2
15.	2	I	2	1	51.	9	II	9	3
16.	9	II	2	1	52.	7	II	10	3
17.	6	II	10	3	53.	6	I	2	3
18.	4	I	11	2	54.	1	I	11	2
19.	8	II	2	2	55.	2	I	2	2
20.	5	I	12	1	56.	8	II	2	3
21.	3	I	10	2	57.	4	I	11	3
22.	5	II	2	3	58.	5	I	2	1
23.	6	I	11	2	59.	4	II	10	2
24.	1	I	2	3	60.	6	II	2	1
25.	5	I	2	2	61.	4	II	2	2
26.	8	II	2	1	62.	5	I	12	3
27.	5	II	10	1	63.	6	II	2	3
28.	4	II	10	3	64.	7	II	10	1
29.	7	II	10	2	65.	6	I	11	3
30.	1	I	11	3	66.	1	I	11	1
31.	6	II	2	2	67.	9	II	2	2
32.	2	I	2	3	68.	2	I	11	2
33.	3	I	10	3	69.	4	I	2	3
34.	4	I	2	1	70.	3	I	2	3
35.	9	II	9	1	71.	8	II	10	1
36.	6	I	2	1	72.	5	II	2	1

TABLE 6

Segments Presented to Rater Groups by Session

Rater Group	Session I	Session II	Session III
A	1-24	25-48	49-72
B	7-30	31-54	55-72, 1-6
C	13-36	37-60	61-72, 1-12
D	19-42	43-60	67-72, 1-18
E	25-48	49-72	1-24
F	31-54	55-72, 1-6	7-30
G	37-60	61-72, 1-12	13-36
H	43-66	67-72, 1-18	19-42
I	49-72	1-24	25-48
J	55-72, 1-6	7-30	31-54
K	61-72, 1-12	13-36	37-60
L	67-72, 1-18	19-42	43-66

sequence to all three judges. Again, the limitation was imposed that no family is rated twice in a series until all other families have been rated once.

In order to evaluate the relative contribution of the audio tape and the typescript to ratings, it might be interesting to provide only one medium or the other to some students in each rater group. Operant and non-operant approaches might well be distinguished by the relative importance of lexical and non-lexical characteristics to the rating of interactions. For those non-operant approaches that focus on the expression of feeling, intonation might be a significant means of communication that could be detected only by listening to the audiotapes. In an operant approach, one might expect that non-lexical characteristics would be less critical such that there would be little discrepancy between audio-tape and typescript ratings.

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A Case Report of Non-operant I then Operant II Treatments for Family B

Identifying Information

Parents. Mr. and Mrs. B have been married 23 years. They are a middle income family and own a home in a suburban area near Washington, D. C.

Mr. B is a husky man in his late forties. He was graduated from college with an A.B. degree and completed some work toward an M.A. degree. He works nights as a clerk and spends his days taking care of his younger son. The non-operant therapist noted that Mr. B's occupation appeared to be considerably below his educational level.

Mrs. B. is a heavy woman in her middle forties. She completed three years of college and is employed as a second grade teacher.

Children. A 20-year old son attends junior college and visits home on holidays and occasional weekends. A daughter, age 18, is married to a serviceman and does not visit. R, a 7-year old boy, is the child of concern in the following reports. He displayed a number of disturbing behaviors since early childhood and resided in a state mental institution for the 17 months immediately prior to the 9-family present study.

Non-operant Case Report[4]

Abstract. The Bs entered the program because they were having difficulty in dealing with their son R, age 7. The main problems were that R had temper tantrums, often echoed what was said to him, and would hurt himself if not constantly watched.

The Bs' marriage has been quite stormy in recent years. They feel that they stay together mainly for R's sake. They seem to have no interests or activities outside of the home.

The therapy was rather directive. The work consisted of getting the Bs to treat each other with more consideration. Suggestions were made to produce changes in R's behavior in areas that they had both agreed upon. The importance of the Bs'allowing R to become more independent was another major focus of therapy. This was a difficult area for Mr. B to deal with. His insistence on treating R like an infant sabotaged some of the behavioral gains that R had made. Mrs. B was more willing to change and to suggest areas to work on.

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[4] This part of the case report was largely written by the non-operant therapist, Gilbert Zatkin and edited by Stanley Pavey, his therapeutic supervisor. It was further edited by Frank Warman and Leopold Walder.

Despite Mr. B's reluctance to accept suggestions, the Bs were able to accomplish some changes in R's behavior. They reported that he no longer threw tantrums when they took him shopping, and that they did not have to watch him as closely. The Bs also reported that R sometimes responded without echoing what had been said to him. It was felt that these changes were transitory and that the Bs need further therapy.

Family description and history. The Bs live in a small home in what they describe as a lower middle class area with a rather transient population. Mr. B works the night shift from 11 P.M. to 7 A.M. He has been working this shift since R returned from the hospital. This schedule allows him to return from work in time to take Mrs. B to school. During the day Mr. B takes care of R, and, from what he says, seldom lets him out of his sight. During the day Mr. B also does much of the housework. They pick up Mrs. B from school at 3 P.M. after which Mr. B goes to sleep. Sometimes the three of them have dinner together.

Mr. B says that he gets very little sleep as he has to watch R during the day. Even when Mrs. B is supposedly watching R, Mr. B still keeps an ear cocked for any unusual noises. He often yells to Mrs. B when he is in bed or even in the bathtub to inquire about R's whereabouts. He feels that his wife does not watch R closely enough and feels comfortable about R's safety only when he (Mr. B) is awake and watching.

Since the two older children are seldom at home, the household consists essentially of Mr. and Mrs. B and R. It seems that since Mr. B seldom referred to the two older children, and since the daughter moved out, there were evidently some severe conflicts which were never solved and which may have left Mr. B feeling bitter about his relationship with them.

The Bs seem to have no outside activities other than their jobs. Hence, a large portion of their lives is centered about taking care of R. Since Mr. B works at night in order to take care of R during the day, this allows the Bs a minimum of contact with each other when they are both working. Thus, it is only when they are both off that they spend much time with each other.

The Bs say that their marriage has deteriorated in recent years to the point where they agree on practically nothing. Mrs. B feels that she changed after her mother, whom she had been very close to, died. This occurred when R was 2-1/2 years old. She said that after her mother's death she became more depressed, had less energy, became more fearful, and put on a lot of weight. She said that before this time she and her husband had gotten along better only because she had gone along with everything that he wanted. During the early part of their marriage they had put each other through college and had been interested in some outside activities such as gardening. However, the Bs agree that since her mother died Mrs. B has had less energy, making it necessary for Mr. B to do a large part of the housework and to be primarily responsible for disciplining R.

Mr. B feels that R has special problems and that he needs to be looked after constantly. Although he is able to discipline R, either by physical punishment or by sending him to his room, he also indulges him excessively with candy and toys. Thus, Mr. B leaves candy in the house where R can get at it, and reacts to R's breaking of a toy by buying him several new ones.

Mrs. B reports that disciplining R is her major problem. She feels that the child has suffered a lot because she had to work and could not stay home with him. She said that R had a baby sitter who used to tie him up and Mrs. B feels quite guilty about this. She also said that R used to have what seemed like convulsions when he was an infant and she wondered whether he might be epileptic.

Mrs. B feels that R's present hyperactivity might be due to the baby sitter's tying the child up to a chair. She was not aware that this was happening until it had been going on for some time. She feels guilty that she was not home with R although it was necessary for her to work in order to make ends meet. She began to work part time soon after R was born and began full time when R was about three.

Mrs. B said that R had been a quiet baby but had become hyperactive after she had started work. She said that she had left her husband after he had refused to allow her to take R off of the bottle. R had been 2.5 years old at the time. This seems to indicate that Mr. B has had a great need to treat R like an infant, and that this has been going on for a long time.

Mrs. B reported that she had R tested when he was five. At that time his verbal behavior was very limited and he was hyperactive. He had not been able to adjust to going to school. The Bs were told at the time of testing that R needed a chance to grow up and that this could only occur if he was out of the house.

Since the Bs could not afford a private facility they sent R to a state mental hospital. Mrs. B reported that R had made some progress while he was there. She felt that his verbal behavior had improved considerably and that he was much more adept at taking care of his own needs. He learned to dress himself and to sleep by himself. Prior to his admission he had always slept in the same bed with either Mr. or Mrs. B or both of them.

R came out of the state mental hospital especially for this project. Mrs. B said that she would send R away again if she felt that this would help him. Mr. B said that R needs him and that he would not send him away again. During the project R was being given home teaching by a teacher who was using M&M candies as an incentive. He also had been placed on dexedrine. Mrs. B felt that his behavior had regressed during the short period from his leaving the hospital to the start of the project. He was once again sleeping with the Bs instead of by himself and his temper tantrums had increased in frequency.

Therapist impressions of the parents. Mrs. B's main problem in dealing with R is that she does not discipline him consistently. Mr. B also has this problem although he was much less aware of this. His difficulty with discipline stems from his unwillingness to allow R to become more independent. Mrs. B's difficulty with discipline stems from her guilt about the way R has been treated. She was much more willing to allow R to become more autonomous.

Mr. B tries to come across as a competent, rational being whose efforts to deal effectively with R are being sabotaged by his wife. He feels that he knows how to deal with R but that his wife will not do what he says. He entered the program with the hope that I would be able to convince her that what he had been saying was correct. He showed little motivation to change his own approach. Instead he minimized the importance of changes that I suggested, and concerned himself with trying to get at some basic cause of R's bizarre behavior. He also ridiculed or ignored any suggestions that his wife made.

Mr. B tries very hard to suppress any display of emotionality. He speaks in a controlled monotone and often seems to be working hard not to show anger. Instead he manifests quiet exasperation at what he sees as his wife's flaws. He seems to have a strong need to control the lives of those around him. He evidently sees himself as a giving and uncomplaining person who is not appreciated by his family even though he has sacrificed a great deal for them.

What struck me very strongly about Mr. B and made me feel compassion for him was the seeming emptiness that seems to characterize his whole life. His need to be liked and approved causes him to want to control others. I would speculate that this need to have others depend on him had a lot to do with his poor relationships with the two older children, both of whom evidently left home as soon as possible. Thus, Mr. B's life seems to be characterized by a failure on his part to get what he wanted. He went through college after his marriage and now works as a clerk. He seems to feel that he and his wife will never be very close, and he has obviously failed in his relationships with his two older children. All that he has left is R whose care seems to have become his one mission in life. Since Mr. B has been unable to get his needs for control and approval met anywhere else, it is vitally important for him to feel that R needs and appreciates him. This seems to be why it is so important for Mr. B to continue treating him like an infant. Without R his life seems to have little meaning for him.

Mr. B feels that his wife is too emotional and he seems to resent it especially when she is talking about something that he has done. She seemed to enjoy telling me that Mr. B is verbally abusive to her at home and that R had picked up bad language from him. Mr. B seemed to be humiliated when his wife would speak about him in this way. Evidently this exposure was quite embarrassing to him because it showed him in a bad light and destroyed the picture of himself that he wanted to convey. He would, in the interview, occasionally try to stop his wife from talking, although he usually ended up by turning his chair away and waiting her out in contemptuous silence.

The Bs generally did not show much warmth for each other, although this was more true of Mr. B. Mrs. B would occasionally turn toward her husband, touch his arm, and smile at him. The one time that Mr. B showed some warmth for her, however, she rebuffed him. Thus, it seems that the Bs are quite proficient at turning off any display of warmth or affection that either initiates.

I found Mrs. B to be much more motivated to change than her husband; She was able to give what seemed like an accurate picture of what was going on at home, and was open to suggestions that I made to them. She also made several good suggestions herself which her husband either ignored or ridiculed. Mr. B seemed reluctant about the changes that he agreed to, and acted as if he was being dragged through the program against his will.

Therapy strategies and results. The therapy was rather directive. I tried to make them more aware of the impact that they were having on each other and on R. I dealt with ways that R was controlling their behavior and I tried to point out to them that their lack of consideration toward each other was having an adverse effect upon R. I also made it clear that certain needs were being met by R's bizarre behavior and that they would have to acquire other satisfactions in life if they would be willing to allow R to behave in a more socially acceptable manner.

During the course of contact with the Bs my feelings about them changed. Initially I felt that Mr. B was more motivated to change his behavior. However, I feel that Mrs. B ultimately got much more out of the therapy.

During the first few sessions Mrs. B spoke about highly irrelevant matters and I had to interrupt her quite often. My patience was about at an end during one session when Mrs. B talked about how her mother had appeared in her room on the day after her death. She also talked about how she and her mother "had ESP" and were able to experience what the other was feeling even when they were far apart. It seemed that Mrs. B was able to tell her husband in this way that her mother was more important to her than he ever was.

In addition to being irrelevant, Mrs. B spent a lot of time in the early sessions giving me numerous examples of how her husband verbally abused her and humiliated her. She seemed to get pleasure out of letting me know that the control he showed during the sessions was a "put on" and that he was abusive to her at home. He denied most of what she accused him of and said that she was too emotional and exaggerated out of all proportion.

In retrospect it seems that her exposures of their domestic strife were quite therapeutic for her. She was able to get rid of a lot of hostility that she felt for her husband by describing to me how badly he treated her. It seems that she was effectively double binding him. If he reacted to her accusations by verbally abusing her, he would be admitting to me that what she said was true. If he did not become abusive, she would regale me with another choice tidbit depicting his lack of control. Thus, Mrs. B was able to punish her husband by pointing out incidents to me where he showed poor control and got angry.

Mr. B was effectively able to punish his wife by ignoring her. This would serve to get her to speak louder and more rapidly in an attempt to get some response from him. Often she would look quite foolish when this happened, which seemed to give him some pleasure. He also punished her by telling me what a poor housekeeper she was and how unconcerned she was about R. Thus, during therapy the Bs seemed quite proficient at punishing each other and seldom treated the other with any warmth. However, he was more rejecting than she was.

It seemed that it was essential to deal with the Bs' relationship with each other before they would be able to deal with R more effectively. It seemed that much of R's obnoxious behavior was being learned either through his imitating what was going on in the home, or was being used as a means to get some attention from his parents.

It became evident after the first few sessions that the Bs would not work to improve the quality of their relationship for their own sake. It seemed that there was too much mutual hostility for either to admit to doing something for the other. As a consequence, I suggested that they try to treat each other with more consideration for R's sake, rather than for themselves.

The following week the Bs reported that they had treated each other with more consideration for two days. The week after that they reported that they had gotten along better for most of the week. At about this time I asked them to agree to changes in R's behavior that they would like to make. Shortly after, it became evident that Mr. B was not interested in working on specific areas but seemed to want some kind of magical key which would solve everything. Mrs. B suggested a number of areas to work on. These included reducing the amount of candy R ate between meals, giving him fewer toys to play with, and getting him to sleep in his own room. Mr. B said that he already knew how to deal with these problems but that they were not his main concern. I tried to get him to realize the importance of working on small areas of behavior. (A behavioral approach?)

The following week the Bs reported that they had locked up all the candy and Mrs. B seemed quite pleased. They had also taken away most of R's toys. At about this time Mrs. B suggested a plan where they use candy as an incentive to get R to do some schoolwork. However, she got no encouragement from her husband. The Bs, at my suggestion, also started to work on getting R to sleep in his own bed rather than their's. At first they were reluctant to do this; however they were able to agree that they both got pleasure out of having R sleep with them since he was able to serve as a buffer to keep them from sleeping with each other.

According to their reports, the Bs made progress in the above areas for the next few weeks. However, during the Christmas vacation Mr. B decided to again indulge R by giving him all the food and toys he wanted. His rationale was that R should have a normal Christmas like everyone else. His behavior seemed to be an act of defiance against me wherein he was able to assert his authority. His behavior undid some of the gains R had made, and Mrs. B was very angry at her husband because of this indulgence.

During the week before our last interview, the Bs once more got back to work. R was now sleeping in his own room although the doors were open to both of their rooms. Mrs. B seemed very pleased with this progress and was enthusiastically suggesting new areas for them to work on. However, Mr. B did not share this enthusiasm and even seemed to be somewhat depressed. He seemed sad that R was sleeping by himself instead of with him, although he said that this was best for the child. He seemed angry at me for having made suggestions that were increasing R's independence, and he remained even more aloof and emotionally detached than usual during the last session.

Summary impressions and recommendations. In retrospect I feel that more time should have been spent in dealing with the Bs' relationship with each other. Evidently the marriage had been a lot better at one time. I feel that I was too cautious in confronting Mr. B with his impact on me. I also never dealt with his relationship with his two older children. However, he seemed to be so sensitive to criticism that I found myself picking and choosing words so as not to upset him. However, I felt that he might have benefitted more if he had been given the opportunity to look at and work through his inappropriate need to keep R dependent on him.

I feel that the Bs did make progress in dealing with R as judged from their reports. Mrs. B reported that R no longer had tantrums when they took him shopping. She attributed this to their letting him know in advance that he would only be given one thing when they went to the store. Mrs. B was now able to discipline R without feeling guilty; as she had become aware that this was for her own good, although it still was difficult for her. R was now eating less candy since they had locked most of it up. However, Mr. B persisted in bringing candy into the house where R could get at it. R also was playing with fewer toys and was not breaking them as much. He was also now sleeping in his own room.

At the end of therapy Mrs. B was enthusiastically suggesting new areas for them to work on. The fact that she had been able to do things to allow R to become more independent seemed to be quite rewarding to her. However, R's increased independence seemed to have the opposite effect on Mr. B. He seemed to feel that R's sleeping in his own room constituted a withdrawal of affection from him. He missed R's sleeping with him and had tried to get R to sleep with him once. However, Mrs. B wouldn't let him. It seems that Mr. B still has no awareness that a large part of the problem is his own unwillingness to allow R to grow up. I feel in the future that it is essential that he become aware of these feelings. It is also important that Mrs. B stop bringing up things from the past to emphasize her husband's weaknesses, and that he be more responsive to her. The Bs must learn to treat each other with mutual respect in order for R's behavior to improve. They must both be committed to specific changes in R's behavior in order for them to work together effectively to institute these changes.

Operant Case Report[5]

Family description and history. R was 7 years old at the time of the consultation. He had spent most of this time living with his parents. Although, up to this time, both of his parents had been working full time, and so he has spent most of his time being taken care of by his older sister. At the time of therapy, however, only he and his parents were residing in the same home.

Mrs. B might be generally described as an accepting, inquisitive parent. Her interactions with R consisted of taking care of his basic needs, i.e., feeding him and keeping him clothed and cleaned. Beyond that, however, she did not do much with him. She used as an excuse for not doing more the fact that she had to work and she did not have too much time. In observations made at the home, it appeared that R was worse in the presence of his mother. It appeared that the only way he could get her attention was by yelling, screaming, shouting, jumping up and down, and banging his head against the wall.

In describing R she said that she believed he was "possessed by evil spirits," and that he was a very hostile boy. She stated that many of the things he did were to relieve some of his pent-up emotions. She went into a very long, imaginative, description and interpretation of his behavior. For example, she stated that his "deviant" drawings indicated "deviant thinking and feeling."

Mr. B on the other hand, might be described as a stern and highly punitive parent. He described himself as being highly concerned with all of the child's behavior and gave this as the reason for his disgust and punitiveness. In observations in the home, it was quite frequent to see Mr. B shouting at R. However, during these times, R did,in fact, do what Mr. B demanded he do. However, it never seemed that Mr. B actually hit R for anything that he had done.

Much of the time of the interactions between Mr. and Mrs. B was spent in bickering and accusing each other of failings. Examples of the complaints are as follows: Mrs. B would say that Mr. B was overly hard on the children, that he made too many demands, and was too rough with them. Mr. B would retort with statements such as Mrs. B didn't show any concern for her children and so forth and so on.

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[5] This part of the case report was largely written by the operant consultant, Richard Switalski and edited by Leopold Walder.

Apparently there has been a history of marital discord with the Bs having been separated twice.

There was disagreement with respect to R's need to be treated in a residential treatment center for the emotionally disturbed. Mrs. B went along with a psychiatrist's recommendation that he be placed in such a center and felt that this would be the best possible treatment for R. Mr. B, on the other hand, disagreed quite highly, making statements such as, "There is nothing really wrong with R except that he is a very active and emotional boy." He spent much time in his home, therefore, actively training R to do various things; for example, identifying various objects, spelling letters and engaging in various activities such as turning lights on and off.

While there is very little information regarding the typical behaviors of R's siblings or his relationship with them, it seems that he got along rather well with both of them. On one occasion I was able to observe his 20-year old brother with him. They appeared to play around. Likewise, at this time, Mr. B would engage in a lot of play with R such as wrestling around with him.

Dynamics and relevant history of R's life. There is little information regarding R's physical capabilities and health during his early childhood. The only information which we do have was obtained following R's failure to get into the first grade after spending two years in kindergarten. R's teacher's report that year was that he did very poorly and did not seem to learn. She stated that occasionally he had a good day or two but in general his behavior was very poor. He used very few verbal responses in the teacher's presence and she estimated that his level of functioning was at the level of a two year old. The teacher had also noticed that he had a soiling problem throughout his second year of kindergarten. Thus, R was referred to a diagnostic center for testing. At that time no statement was able to be made as to his intellectual functioning. The major aspects of the diagnosis was that R was a severely disturbed child, who was psychotic at least some of the time. They likewise stated that he resorted to negativistic and autistic pre-occupations which immobilized his behavior with associated inappropriate affect. The diagnosis was confirmed in another institution by a psychiatrist who suggested that R should be placed in a residential treatment center for the emotionally disturbed. Thus, R spent 6 months in a state institution for the mentally disturbed. This occurred just prior to his being treated in the Parent Project.

Statement of problem. R was originally referred for diagnosis by the county school system. They specified his problem as being selective mutism, tic tension, and retention of feces.

In the Parent Project, the major technique of assessing problems was with a complaint list which was to be made out by both the mother and the father. This list specified five (positive) behaviors which they wanted their child to increase. These five behaviors to be increased were to be listed by the parents in order of their importance. Similarly they were to list five (negative) behaviors which they wanted their child to do less of, that is, to decrease. In general both Mr. and Mrs. B agreed about their behavioral goals for R. The positive behaviors they listed were that they wanted their child to talk more, to be able to dress himself, and to play and be more attentive to other children. (In the past in dealing with other children he would occasionally throw a rock at them or hit them and thus many of the parents in the neighborhood were afraid to let their children play with R.)

With respect to the behaviors to be decreased, the Bs both agreed that they wanted R to be less destructive and stop crying. Apparently R would throw a wild tantrum when he was not allowed to get what he wanted or do what he wanted. He would just yell and scream and shout and bang his head up against the wall or break some things which were near at hand. Although this behavior appeared to occur more in the presence of Mrs. B, both Mr. B and Mrs. B specified that this was one of the things that they would like to work on during the operant consultation sessions.

While they did not specify how they wanted R to speak, it was observed by the therapist that much of the problem centered around Rs failures to initiate speech. This was later confirmed by Mr. B. His verbal interactions with his parents were characterized by R repeating word for word what his parents had just stated to him. For example, if Mr. B would greet R with the phrase "Good morning, R," R would repeat after him "Good morning, R." Likewise, for instance, if Mr. B or Mrs. B might suggest that R get to bed, R would repeat after them, "Go to bed." I thus explained to them at that time that the type of speech that they seemed primarily concerned with was speech initiation. Most of the time, R could repeat what had just been said to him. However, in very few circumstances did he ever initiate any conversation. He rarely asked for anything, using speech. Most of the time he would grab what he wanted or gain attention by sitting in the lap or petting the face of someone who might give him something he wanted. When I visited the Bs home on many occasions and tried to sit down with the Bs, R would engage in such behaviors as sitting on your lap, yelling, kissing you, grabbing or hugging your face, etc. Thus, we would likewise be concerned with getting R to gain the attention of others in more acceptable ways, primarily by speaking. Also, a behavioral goal was to get him to be quiet on some occasions. In summary, then, the goals of therapy were the following:

1. To build a generalized conditioned reinforcer in the Bs family, such that the Bs could use a previously neutral object, (in this case, money or pennies) to increase or change any ongoing behavior. Likewise they could use it to develop new behaviors which did not exist in R's repertoire.

2. To introduce a number of behavioral techniques for increasing or decreasing behavior: a) specifically fading techniques, (e.g., from imitation to initiation) in which the major role is to get the parent to decrease the amount of participation or prompting he engages in to get the child to do a certain behavior, b) shaping techniques which are used to develop an entirely new behavior which does

not exist in the repertoire of the child, c) aversive techniques, whose purpose it is to decrease some ongoing behavior, e.g., time out and extinction.

3. To introduce the family to discrimination techniques which are used to get and maintain the attention of a child with respect to some specific stimulus dimension. This would be followed by a generalization technique in which a specified stimulus dimension was held constant and the contextual stimuli varied, such that the child would be able to identify (i.e., respond differentially to) that particular stimulus dimension regardless of context.

1. Establishment of a conditioned reinforcer. The basic program for establishing a conditioned reinforcer consisted of:

(a) experience with exchanging initially neutral objects for desired objects, (b) increasing the variety of desired objects for which the previously neutral object could be exchanged, (c) increasing the time interval between earning the neutral object (perhaps now a reinforcer) and exchanging it, and (d) making the availability neutral object contingent upon the behavior which you want to increase. If the behavior does increase, then the initially neutral object is now a generalized conditioned reinforcer.

In the present instance, we decided upon using pennies as the generalized reinforcer because these could later be used for a relatively longer period of time by the parents with the child. Likewise, pennies could be used in the rest of society; for instance, the child could use the pennies when he walked into the store on his own, independent of his parents. The basic design was such that the parents at first just exchanged pennies for one object (a above). In this particular case the Bs selected cheese crackers since R (at that particular time) enjoyed eating cheese crackers very much. An attempt to make the penny more generalized we immediately initiated a store situation. This consisted of assembling a number of different objects R might like, placing them before him at specific times, and giving him the object he selected contingent on R's giving a penny for it. This seemed to have the advantages of not only giving R the experience of exchanging pennies for a number of objects, but also served as a test that the Bs could use to determine exactly what things R really liked. However as the first week continued, it appeared that R continuously selected a very narrow range of objects from the store. These objects consisted of relatively small things such as: cheese crackers, potato chips and other small candies and candy bars.

Since one of the prime functions of a conditioned reinforcer (as opposed to many unconditioned reinforcers) is that the subject is never satiated by it, I was mostly interested in increasing the time interval between his getting the pennies and his exchanging them for the backup reinforcer. Thus, after the very first week I suggested that the Bs use pennies contingently. By this I meant giving pennies for R performing various household tasks such as picking up books, putting things away, or putting his clothes on, etc. While I did not specify what particular behaviors to reinforce, the Bs reported verbally that they had had lots of success with R on this assignment. They stated that he seemed to enjoy earning pennies very much and that the amount of his behavior (e.g., watering the plants, etc.) had increased very much. While we do not have any direct evidence to support this statement, it is instructive to look at the number of pennies spent each day. We find that in week #1 R spent 123 pennies, that in week #2 he spent 380 pennies, in week #3 he spent 415 pennies, and this increased to 601 pennies by the fourth week. However, in the second week one major problem developed. In their eagerness to keep R happy the Bs began paying him many, many more pennies than he would exchange for desired objects at store time. By the end of each day R had an excess of pennies left over. Frequently R was observed just leaving the pennies lying around. We therefore believed that the pennies were still not as strong a reinforcer as we would have liked them to be; for we believed that if he wanted pennies enough, he would keep them in his pocket. Thus, two tests were instituted to test the relative strength of the reinforcer. The two tests that we chose are relatively general and used in animal learning situations.

The first test (passed by Moses in Exodus), conducted twice a week, was to assemble five items, a penny and four other items (Moses was given hot coals as the alternative), and let R select one of these five items. It was hoped that we could observe over a time that R would switch from selecting a primary reinforcer, the cheese cracker or some other edible, and begin selecting the penny, thus indicating its gain in relative strength. However, this measure was taken for a period of three weeks, and throughout this whole three week period R would consistently choose the cheese cracker over the penny. This suggested that the penny was not stronger in its reinforcing effects than the cheese cracker itself.

The second test for the strength of the conditioned reinforcer was the progressive ratio test. This is based on the assumption that an object contingent upon a behavior which maintains or increases that particular behavior is a reinforcer. The particular behavior which we used was relatively simple: R was required to drop toothpicks into a milk bottle. At first R would drop one toothpick in and get one penny, then he would drop two toothpicks and get a penny, then four, then six, then 12 toothpicks, etc. The number of toothpicks he needed to drop to receive one penny was to increase progressively until he was being reinforced on a very high ratio schedule such as FR150 or FR200 toothpicks into the bottle before a penny would be given. The problem with this test, however, is that R would continue for a 20 minute period of time to put many toothpicks into the bottle even though he did not receive a penny. This suggested that the task might have been fun in and of itself. Thus we ceased this particular test after one week.

As the weeks went by, most of the tasks which were then initiated in the home used pennies as the reinforcers for that behavior. However, a number of problems remained throughout the operant treatment II period in using these generalized conditioned reinforcers. One of these problems was the fact that Mr. B never systematically increased the delay interval between earning pennies and exchanging pennies. This resulted in R not working or R actually refusing to work in any situation except just prior to the time he wanted something. Thus, when the Bs decided to sit down to work with their son he typically would not work; however, if he wanted something, he would ask his parents to work. Then he would engage in the appropriate behavior for the pennies which were immediately exchanged for the objects desired.

To partially overcome this, I instructed them to use other things as backup reinforcers in the store: e.g., the renting of certain toys which R would like to use very much, the going for a ride in the car with his father which he apparently did every day and which he also enjoyed very much, and the going for walks with his mother. While this seemed to add somewhat to the strength to the reinforcer, the inconsistency in building the time interval between earning the token and the exchange period however failed to produce the generalized reinforcing effect which we had hoped for.

A second problem which we had with the generalized conditioned reinforcer was that of the access to the primary reinforcer. Most of the objects which R desired most and exchanged his pennies for were edibles: candies, potato chips, etc. We thus initiated a system whereby he would pay for a certain number of objects each day. This assumes, however, that these objects are not available to him at any other time. We had very much difficulty with this in the B home. Apparently, Mr. B believes in having a lot of snacks around the house at all times. He took no special pains to lock them up or keep them out of R's reach. Although Mr. B maintained it was not so, R apparently was able to get anything that he wanted at almost any time. Mrs. B, on the other hand, while trying to be somewhat more consistent in her withholding of the primary reinforcers, frequently forgot to ask R to pay for anything which he had obtained. Thus, at one period on the consultation session we decided that we would have R pay for at least one object each meal (preferably the object which he liked most). For instance, R enjoys bacon very much for breakfast. Therefore, we established that R would pay for the bacon and could get his milk and the other things that he did not like too much for nothing. While this did, to an extent, have the effect of R's holding onto his pennies a little bit more, the failure of the parents to consistently demand payment resulted in a relative weakening in the generalized reinforcer.

A third problem which we had in the generalized conditioned reinforcer was that many other behaviors which the parents previously had described as being desirable decreased as R had to pay for them. R enjoyed drawing with a magic marker. In fact each day he would spend at least a half hour to an hour and a half sitting at the table drawing with this magic marker. Thus, we hoped that he would be willing to pay, say 5 pennies, to rent this marker for a day. As time went on and R was required to pay for more and more things, including items from his dinner table, a decrease in his behaviors occurred. For instance, he stopped renting his magic marker; therefore, he stopped drawing altogether. He also stopped renting the scissors used for cutting out various objects. In fact, many of these other behaviors ceased entirely as long as these objects were being rented to him for pennies. When the contingency, however, was taken off (when R was no longer charged to rent his magic marker) the use of the marker increased once again. In general, although the generalized conditioned reinforcer could maintain behavior in certain circumstances, the circumstances were such that they would only maintain behaviors just prior to exhanging the penny for that desired object. I believe that if we had established a system whereby he could exchange his pennies only at certain times of the day or if he had to hold onto the pennies for longer periods of time (say, upwards to two or three days), that we might have had more success with this token system.

2. The fading procedure: The Bs were very concerned with developing some initiated speech behaviors. While the shaping procedure could have been used in this particular case fading seemed more appropriate. This was because R was able to imitate most of what either of his parents said. R already emitted many complex English vocalizations. What was needed was that his parents should systematically reduce the amount of prompting that they engaged in order to get R to make a particular verbal response. A favorable situation in which we could start the training occurred in the morning when the child and a parent first greeted each other. While R's imitating his parent's "Good morning" was an appropriate behavior, it might be possible to fade out the parent's prompt and get the same "Good morning" from R as an appropriate imitated behavior. It might be possible to so arrange it that we could get R to initiate the "Good morning, mommy" or "Good morning, daddy."

Thus we started off the fading procedure by having the parent after meeting R wait 30 seconds first, and then stating to the child "Good morning, daddy" in the case of the father (and "Good morning, mommy" in the case of the mother). This was done; as expected it was followed by R saying the exact same thing. Thereupon R was hugged and kissed and given a penny. The remainder of the procedure consisted in systematically increasing the delay interval between the parent and R first seeing each other and the parent prompting. Thus, we started off by the parent walking in each morning, waiting 30 seconds and saying "Good morning, daddy (or mommy)" and having R repeat the greeting. In the first week both parents prompted R after 30 seconds delay each day for the 7 days. Beginning with the second week we began to increase the delay interval. Thus, the first day we waited 1 minute; the next day 1-1/2 minute; the following day 2 minutes; then 4 minutes; then 5 minutes; and so forth up to a 10 minute delay between meeting and the parent's prompt. Thus the parent would walk in and wait for 10 minutes all the while ignoring R, in spite of the fact that he would be hugging and grabbing the parent. The parent would not respond in any way until the specified time (say, 10 minutes) had elapsed. If, however, during this time, R responded with a "Good morning" the parent was instructed to then begin to interact with him. After 8 days the parent began saying only "Good morning" and the appropriate reinforced response would be "Good morning, daddy" or "Good morning, mommy" appropriate to the sex of the parent. This continued for a week at which time R made the correct response with

with only this partial prompting. The following week the parents were instructed to prompt with only the word "Good". Thus, on the first day of that week, the parent waited 10 minutes, stated "Good" and R said "Good morning." During this time both Mr. and Mrs. B stated that R would become very active and agitated and look at the parent and go through all kinds of facial grimmaces. By the 23rd day of fading training, all that was needed from the parent was the sound"Goo-" (good without the d) and R would say "Good morning, daddy." This procedure was continued so that after the fifth week the parent would wait the 10 minutes, then nod his (her) head, and R began to initiate. "Good morning, mommy" or "Good morning, daddy," as appropriate. The Bs reported that in addition to R's initiating "Good morning" to his parents that he would use this greeting to many other people. He also began to use the words "Hello" attaching the person's name. This was so for his teacher and relatives who came to visit him frequently (perhaps people whose names he knew).

The Bs were very satisfied with the fading procedure. The major problem which we had with this technique, was that we appeared to increase the delay period before R had gotten the knack of saying "Good morning, mommy" or "Good morning, daddy." I believe that, had we first faded some of the "Good morning,-" prompt at a short delay interval first and after that gradually increased the delay interval, we might have had more success and less emotional behavior. In general, the fading procedure was used to get R to initiate a greeting of "Good morning,-" by gradually and systematically reducing the amount of prompting while giving the child adequate opportunity to make the appropriate response. The reader should also note that the appropriate response was followed by a hug, kiss, and a penny.

3. Discrimination procedures as a prerequisite to concept formations: Most of the tasks given the Bs were based on discrimination procedures. Since there was much evidence to show that the main purpose of discrimination procedures is to maintain attention along some specified stimulus dimension these were used as the prerequisite to forming various concepts. It was believed that once R learned to attend to the appropriate stimulus dimensions, vocalizing appropriate labels could be obtained from R by using a shaping or fading procedure (as described above). Hopefully R would also begin to use these words in new circumstances in which that same stimulus dimension was encountered. For example, if R were trained to vocally differentiate red from green pieces of paper and then retrained to differentiate red from green cars, when presented a new stimulus such as a red chair and when asked what color was it he would respond with "red" or "that is red." Thus, the basic or first steps in establishing concepts would be to establish a simple discrimination.

The general method used in establishing a descrimination was first of all to pre-determine two highly distinct or discriminable stimuli and two responses which should be made by the boy to these stimuli. We assumed that R would have two responses in his repertoir ("red" and "green") which could be connected appropriately to the two classes of stimuli (the red class and the green class). One observes that even the most simple of discrimination tasks very frequently take three to four weeks to obtain. Thus, we tried a procedure which was designed to get the child to rapidly differentiate (or differentially respond) to stimuli. The basic technique was to present one stimulus consistently and to prompt the child until he made the one proper response in its presence. Once he dependably initiated the proper labelling response to the first stimulus, we would present the second stimulus. At first, the boy would continue making the response to the second stimulus which had been established to the first stimulus. To learn to make the second response to the second stimulus he was prompted at first with the prompting being systematically reduced (faded).

The second phase of any discrimination task is to get the child to learn to switch appropriately from one response to one stimulus to the other response with the other stimulus. This was done by presenting blocks of uniform trials. Thus, on day #1 R was given 20 trials with one stimulus then 20 trials with the second stimulus. Switching training began by presenting 10 trials with the first stimulus, followed by 10 trials with the second stimulus, followed in turn by 10 of the first, and finally followed by 10 of the second. Then eight alternating blocks of 5 trials with each of the two stimuli, and so on, until R could alternate from response 1 to response 2 when stimulus 1 and stimulus 2, respectively, were presented. After the child learned to respond alternately the stimuli were then presented in a random fashion. This requires the child to attend to the stimulus to make a correct response. The first task that we decided on was for R to begin to differentiate between "what" question and "who" questions. The two stimuli which we selected were "What am I?" and "Who am I?". The correct response for the former question was "a man" when asked by his father and "a woman" when asked by his mother. The correct response for the latter stimulus was "daddy" (and "mommy"). Thus when Mr. B asked R "What am I?" the correct response would be "man" and when asked "who am I?" the correct response would be "daddy." Both the procedure and the result recorded in terms of percent correct out of 40 possible responses per day are in Figure 4. The dotted line represents the percentage of incorrect responses to the "what" question and the solid line represents the percentage of incorrect responses to the "who" question. As can be seen, throughout the entire performance R consistently made more errors when asked to respond to "What am I?" by his father; however, over the course of the 37 day experiment errors to both stimuli ("What am I?" and "Who am I?") decreased gradually to the point that by the 37th day R was responding correctly on 100% of the trials to both stimuli. The procedures were, once again, that each day he was presented 20 trials of "What am I?" followed by 20 trials of "Who am I?". This was repeated on the second day. On day 3 he was given blocks of 10 trials, then blocks of 5 trials for the next 19 days. As can be seen by the figure,

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Insert Figure 4 here

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the data were very variable from day to day. From days 14 through 21 an FR2 schedule of reinforcement was initiated so that R might pay more attention (or work harder) for his pennies. This schedule consisted of making two correct responses before being given one penny. This same ratio schedule of reinforcement was used in all of the other concurrent discrimination procedures going at that time with the B family. However, as time progressed, R's behavior in these situations became more and more hyperactive and less task-oriented. This became so disruptive that at the end of that week he would not finish any of the tasks which he was given. It should be noted accordingly that on days 14 through 21 some of the percents are based on the fewer number of trials. After R was put on CRF again, he once again completed the 40 trials and we notice a gradual decline of percent of errors and a leveling off at 100% correct in answering the "What am I?" and "Who am I?" questions appropriately.

Mrs. B, likewise, engaged in this particular task: teaching R to discriminate between "What am I?" and "Who am I?". But, in her case the response was different, of course. While the data was somewhat similar to that shown in Figure 1 for Mr. B, it was not quite so good in that she did not work with R everyday. Some weeks she only worked with R 3 days a week and some weeks even less than that.

The other discrimination tasks used with the B family were: to differentiate "big" from "little". In this particular task a big pencil and a little pencil were used. R was first given 20 trials a day using the decreasing block presentation procedure described above, gradually switching to random presentation of the two stimuli. After using pencils, big and little books were used as the two stimuli. While R's performance shows improvement in terms of percent incorrect, he never reached 100% correct after 5 weeks of training of "big" versus "little".

Other discriminations used were: "on" versus "off." The stimuli used was a flashlight. When it was lighted, the response which was required was "on"; when it was unlighted, "off." This task was used only for 3 weeks.

Mrs. B engaged in a discrimination task to get R to identify or differentiate first, men from women, and then, boys from girls. The major procedure here was, first, to get one picture which R would call a "man" another which he called a "woman" then to get a number of other pictures to which the correct response was "man" and others to which the correct response was "woman." Later a number of other pictures to which the correct response was "boy" and "girl." Uniform blocks of men, of women, of boys, and of girls were presented. Then the man and woman pictures were gradually mixed in with the other two (men and women) sets. Once again R's progress on these tasks improved; however he did not reach 100% on any of them.

Two of the problems in the discrimination task were (1) the failure to use a strong reinforcer, (in this case we used the weaker penny reinforcers instead of the probably stronger chees crackers);

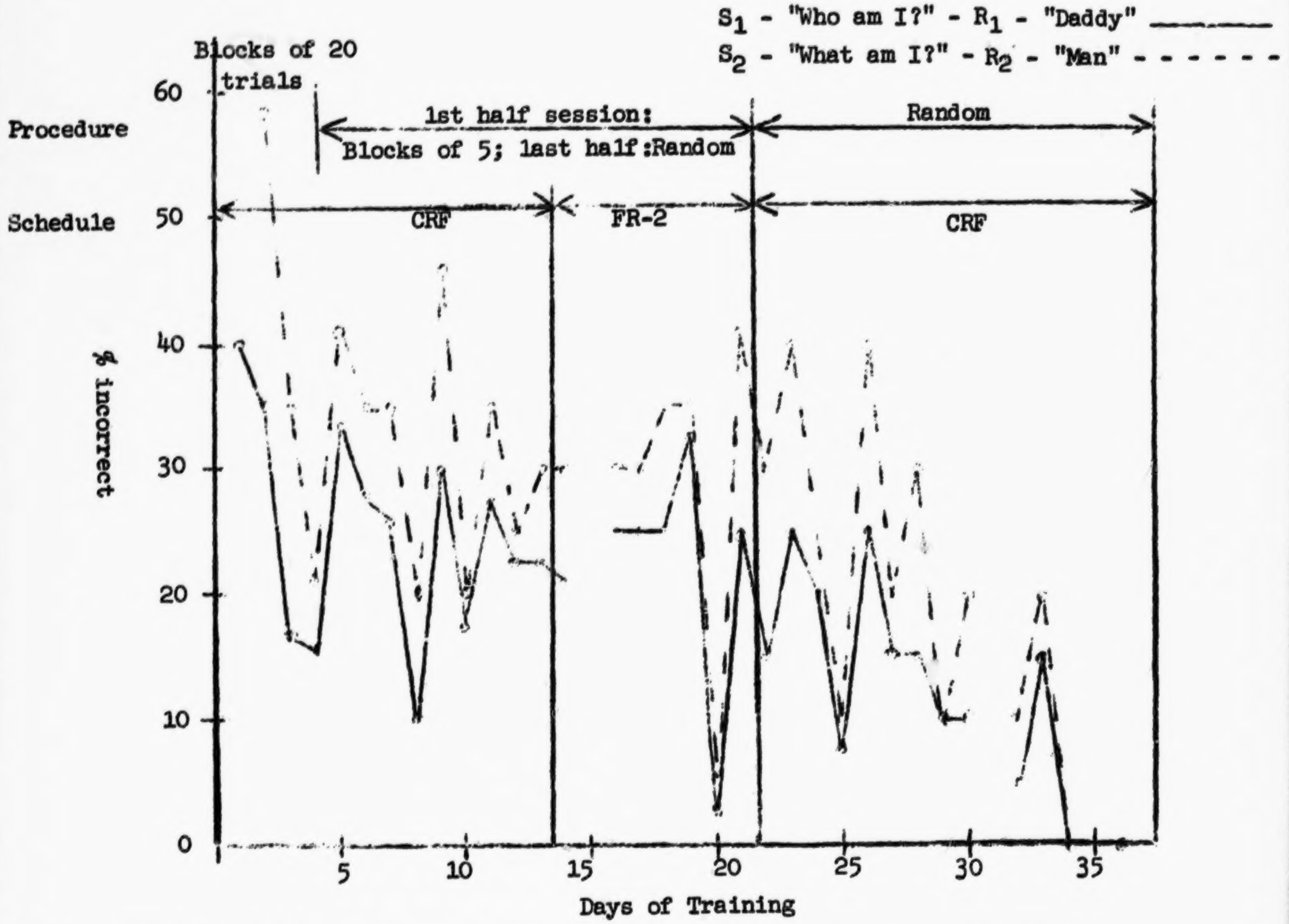

Figure 4. Percent of incorrect responses in a verbal discrimination task

(2) the parents did not work with R consistently each day.

Another problem which we had with the discrimination problem is the B family (both mother and father) apparently in their desire to help R learn these problems would often change the task from what I had specified. For instance, rather than present the stimulus randomly to R such as the flashlight lighted and the flashlight unlighted, Mr. B found that R could perform much better if told to "turn the flashlight off". Thus when he told R to turn the unlighted flashlight on, R would turn it on. However, I tried to point out to him that this was different from randomly identifying a stimulus by name. We failed to control parents. They've used consultation since.

We were not as efficient as we might have been had we exerted more control over the parents, progress would have been greater. Examination of the changes in behavior in the home video tapes (See Table 3 .) suggest that we did serve these parents. It might be added that this family like others have continued asking for and receiving operant consultation. The reports we receive from the parents show them to be quite able behavior modifiers of their own child.

Insert Table 3 about here

Table 3: Ratings of 40-Minute Video Tapes

Family B

	Father-child			Mother-child		
	Measurement Period			Measurement Period		
No. of questions by parents	I	II	III	I	II	III
$\bar{X}$	109	104.5	135.81	54	71.22	155.12
(Range)	(108-110)	(103-106)	(133.95-137.67)			(154.14-156.1)
# of scores	2	2	2	1	1	2
No. of answers	I	II	III	I	II	III
$\bar{X}$	10	9.5	31.63	12	14.63	76.1
(range)	(9-11)	(9-10)	*			(71.22-80.97)
# of scores	2	2	2	1	1	2
No. initiated	I	II	III	I	II	III
$\bar{X}$	43.5	11.73	20.81	55.37	54.64	72.68
(range)	(41-46)	(2 - 21.46)	(14.63-26.98)	(54.74-56)	(48.78-60.49)	(68.29-77.07)
# of scores	2	2	2	2	2	2
Time calm	I	II	III	I	II	III
$\bar{X}$	468.5	833.5	522.94	379.47	279.51	1240.96
(range)	(451-486)	(547-1119.99)	(239.06-806.82)	(196-564.19)	(248.78-310.24)	
# of scores	2	2	2	4	2	1
Time tantrums	I	II	III	I	II	III
$\bar{X}$	26	2	4.65	482.5	208.78	107.32
(range)				(478-487)	(174.63-242.92)	
# of scores	1	1	1	2	2	1
(No. obeys) / (No. directions)	I	II	III	I	II	III
$\bar{X}$	.59	.277	.425	.28	.255	.412

blank = only 1 score
*** = all scores the same**

The Rating of Video Tape Recordings of Parent-Child Interactions

In each of the three measurement periods five 40-minute video tape recordings were made of parent-child interactions. These were later rated by our own raters and by Dr. Donald M. Baer. This section describes the tapes in general and the ratings made by our own raters; Dr. Baer's report immediately follows. Neither our raters nor Dr.Baer were told of our design or of the families' treatments. Our raters were told what to rate; Dr. Baer developed his own rating system. In that sense Dr. Baer's ratings are more general (and therefore more demanding) than our own. Our ratings are more specific to the particular children's behavioral problems (and perhaps therefore more likely to show improvement). In fact, as the reader will note, while Baer's report shows improvements, our ratings (included in the case reports) seem much more substantial. This is so even though both sets of ratings were highly objective and very probably not contaminated.

Making the Tapes

In each of the three measurement periods three home tapes were recorded in which we asked that (1) the father and the child interact, (2) the mother and the child interact, and (3) the mother and the father and the child interact. Two office tapes were also recorded in each of these measurement periods. Since the conditions of taping were a little more complex, we present them here.

The fathers and mothers in the nine families were informed by telephone of our plans to video tape parent-child interactions in the University of Maryland's Counseling Center. Each family was scheduled for a 2-hour period. In a later confirmation call they were also told to bring four objects which they and their child could use to work or play together. When confirmation calls were made, one family said they had forgotten about the appointment and had planned to visit a sick sister. We encouraged them to make the trip but informed them that this would entail their making a contribution to a worthy organization in the form of checks they had previously deposited with us. The family then decided to attend our meeting.

The principal investigator greeted the family as they arrived, and took them to a large room equipped with one-way mirrors. The video-taping apparatus was set up behind one of the mirrors.

The objects which the parents brought for the purpose of interacting with their child were taken from them and the family was then left in the room for approximately 20 minutes so that they could adapt to the surroundings. The room itself contained a table and three chairs along with some inoperative intercom devices. In general there was little within the room which could occupy the family.

Following this time period the principal investigator returned and asked the mother to go to another room. After she left, the father was given a number of tests and forms and told to fill them out while the child remained in the room with him. A sufficient amount of work was given to the father so that he could not possibly complete it all in the time he would remain with his child. This 20 minute period was used to evaluate the child's method of attracting the father's attention. While the father was filling out the forms with the child present, the mother was given the same forms to work on in a room by herself.

After the father had been with his child for 20 minutes, the principal investigator returned, took the forms which the father had been working on, and offered the father two of the objects so that he and his child could interact with them. This period lasted for 10 minutes and was used to evaluate the father's methods of relating to his child.

At the end of this 10 minute period, the mother was brought back to the room and told to complete the forms in the presence of her child. (In the meantime, the father was taken to a separate room where he was told to finish the forms on which he had been working.) This period lasted for 20 minutes and was used to evaluate the child's method of attracting the mother's attention.

After the 20 minute period had elapsed, the mother's forms (still uncompleted) were taken from her and she was offered two objects to use in interacting with her child. This 10 minute period was used to record the mother's methods of relating to her child.

The final period lasted for 20 minutes and consisted of the father, the mother, and the child together in the observation room with all the objects that had been brought for the child. The parents were specifically told to interact with the child. This period was used to evaluate the father's and mother's combined methods of interacting with their child as well as such factors as division of responsibilities, role differentiation, and father-mother interactions.

Following the last period the parents were given whatever forms they had not completed to finish at home.

The table below presents the order and types of interaction that were video-taped.

Standardized interactions in the University Counseling Center

Segment	Participants	Type	Time in Minutes
1	Fa-Mo-Ch	Adapt	20 (approx.)
2	Fa-Ch	Father and tests	20
3	Fa-Ch	Father "plays" with child	10
4	Mo-Ch	Mother and tests	20
5	Mo-Ch	Mother "plays" with child	10
6	Fa-Mo-Ch	Group-interaction	20

The first 20-minute segment was not rated. Segments 2 and 4 filled Office Tape #2 (Parent and test) and segments 3, 5, and 6 filled Office Tape #3 (Parent interacts with child).

Video Tape Ratings by our own Staff

While we did not tell Dr. Baer how to rate the tapes and on what dimensions, we did specify closely how the tapes should be rated by 16 undergraduate students. These students had been referred by Prof. Donald K. Pumroy because of their expertise in rating and and describing behaviors in Pumroy's University of Maryland class in child psychology. They were not told of the design of the study nor were they told of any possible treatments given the families.

The student raters were paired on the basis of convenience (e.g., common free hours). They were trained to use the video tape player and each pair was given a particular family to rate. The list of behaviors to rate was to be memorized by each rater. This list of relevant behaviors (in Table 4) was developed from the parents' request for change, from the parents' daily reports, and from the therapists' case notes. The raters were given the opportunity to develop agreement by watching training (non-data, practice) tapes, rating them on the categories, and discussing rating differences.

Insert Table 4 here

The rating took place in a small room in which there was a video tape player with a TV monitor and two 6-button panels, one panel for each rater. Discrete behaviors were rated by depressing

Table 4

Behaviors Counted and Timed by Staff Video Tape Raters

Family A:

Categories:

1. Count the number of questions asked or speech prompts given by the parent. Include leaving one word out of a sentence for the child to supply, pointing to an object for the child to name, asking any questions that would require a vocal answer.

2. Count the number of times the child answers audibly and understandably.

3. Count the child's not-understandable speech. If it is obvious the child said something but you did not understand it, count it here.

4. Count the number of directions the parent gives that require observable non-vocal, motor responses.

5. Count the number of times the child follows the direction given by the parent.

6. Count the number of times the child puts non-food items in his mouth including fingers, pillows, toys, etc.

7. Record the amount of time the child is inattentive to the task at hand. He may get up and leave the task, pick up another object and manipulate it, stare into space or glance around the room, lie down on the floor. Continue timing until he resumes paying attention or until the parent discontinues the task. Definite head movements, not just eyes.

8. Record the amount of time the child screams. Include loud whining but do not count crying.

9. Record the total amount of time the parent talks.

Family B:

Categories:

1. Count the number of verbal tasks (questions or prompts) the parent gives the child. Count each one.

Categories:

2. Count the number of times the child replies to #1. Do not include repeating unless the prompt given was "Say ______" and the child says only the word.

3. Count the number of times the child repeats either all or part of what his parent has said. Also count when he repeats himself, except as in "Say ______" where he repeats only the word.

4. Count the number of times the child initiates a word or phrase, i.e., anytime he says something that is not preceded by a parental question or prompt.

5. Count the number of directions the parent gives (count each time) that require an overt action response.

6. Count the number of times the child obeys number 5.

7. Time child's whining, screaming, crying, tantrumous behavior, stamping feet, running upstairs, any combination of destructive behaviors.

8. Record the amount of time the child is calm - (e.g., moves no more than is necessary for the task).

9. Record the amount of time child spends out of room, whether he runs to basement or is sent upstairs after tantrum.

Family C:

Categories:

1. Count the number of directions the parents give the child that require observable (in the camera's range) responses. The same direction given with a definite break between them is counted twice. A double direction ("Get your book and bring it here") phrased as one is counted only once.

2. Count the number of times the child follows the directions given by the parent.

3. Count the incidence of child's negativism. Include here statements as "I hate ______," "There are no good," "I can't - you do it," and any complaints.

Categories:

4. Count the number of times the child interrupts someone else who is speaking.

5. Record the time the child spends in "task interruption." This includes leaving the task, talking about irrelevant matters, general restless activity or movements that are unrelated to the task, etc.

6. Record the total time the child spends talking.

Family D:

Categories:

1. Count the number of directions given by the parents. These may require verbal or motor responses.

2. Count the number of times the child does not follow the directions or offers an alternative, (e.g., "No, I don't want to" or "Then I won't play" or "Let's do this instead.")

3. Count the number of complaints the child presents, including those of bodily aches and pains, food, school, his sister, his parents, etc. Include statements like, "I hate ______" or "You always make me do this," or "You're not playing fair" or "I don't want to do it that way" (unless this is in response to a direction when it would go into #2).

4. Count the number of times the child repeats a request. (Don't count it the first time.) Count the request each time it is repeated and include saying any words repeatedly, as "Yes,yes, yes,..." (in reference to a request.)

5. Time the instances of the child's hyperactivity. This includes bouncing or jogging, excessive bodily movements, general restlessness, squirming and twisting, running back and forth between his parents, moving while talking when the movement is irrelevant, leaving the table or the task he has been involved in, and all the time he spends off camera if he was engaged in any hyperactive movements when he went off camera.

Family E: Table 4 (Continued)

Categories:

1. Count the number of speech prompts or questions that the parent or sibling asks. This includes any questions or statements that would require a vocal response. It also includes pointing to a picture or object when the task is to name the object. Count only English.

2. Count the number of times the child responds to #1 in an audible and understandable word or phrase. Do not rate by parental response but only if you can hear and understand the speech. Again count English only.

3. Count the number of times the child initiates a thought or idea that is in no way prompted by the parent. This might include questions, etc. Again this must be in audible, understandable, English.

4. Time the amount of non-understandable speech and other sounds including grunts, whines, screaming, etc. Try to exclude Italian.

5. Record the time the child spends tapping objects with his hands or with another object. Exclude tapping or slapping the strings of a guitar.

6. Record the amount of time the parent spends talking. Count a two-second pause at least between the end of one phrase and the beginning of another. If there is not a pause at least this long, keep counting it as one phrase.

Family F:

Categories:

1. Count the number of phrases child says in a high or falsetto voice. Count a two-second pause between phrases before it is counted as two.

2. Count the number of phrases child says in a lower, normal voice. Time as above.

3. Count the number of undesirable gestures the child makes. These are:

   a. blowing through his fingers
   b. biting his finger
   c. flipping pages in a magazine (fast)
   d. tossing objects in the air continuously

Categories:

e. moving hand to face (about mouth) and then to under arm-pit
f. finger movements
g. exclude nose picking

4. Record the time the child rocks while sitting, even when there is only slight movement.

5. Record the time the child rocks while standing, back and forth or from side to side.

6. Time the child's inattention to the task at hand. If there is a definable task that the child should be involved in - record any time the child spends away from the task, including turning away, leaving the task, involving himself in another task, etc. Keep timing until another task is presented or until the parent also abandons the task. (Parent interaction is a prerequisite for the activity to be defined as a task.)

Family G:

Categories:

1. Count the number of speech prompts given by the parent, including pointing to a word or letter, giving direct prompts as, "Say ______." Also, a question (e.g., "What is your name?")

2. Count the number of times the child answers #1 - not as in #3. There must be no multiple prompt (anything other than a person speaking is a multiple prompt) no letters present, nothing for him to read from. (#2 and #3 are mutually exclusive.)

3. Count each word, number, or letter the child reads or recognizes, even if you cannot see if he is answering or naming correctly. You must be able to understand what he has said. This may be in answer to a speech prompt. Repetitions (e.g., ball, ball, ball, ball = 1) not counted.

4. Count the number of correct answers in #3 - in the same way as #3, (e.g., count every word that is correct.)

5. Count the number of times the child initiates any speech, i.e., says anything that is not a repetition or an answer to what the parent has just said. If something else present, count as in #3.

Categories:

6. Count the number of directions the parent gives the child that require a non-vocal, motor response.

7. Count the number of times the child obeys the directions given in #5.

8. Time the non-understandable speech and vocalizations including grunts, coughs, screams, whines, etc. Count as one each unbroken series of sounds.

9. Time inattention to the task at hand, including leaving the table or room, playing with another object, just staring into space, or doing anything incompatible with paying attention to the task at hand. Continue timing until another task begins or until the parent discontinues the task.

Family H:

Categories:

1. Count the number of questions asked or directions given by parent. If the question or part of it is repeated, count it again (unless it is repeated "in the same breath").

2. Count the times the child answers the questions unless she says, "I don't know." If she says, "I don't know," and then answers the question, count it only in category number 3. Include as answers shaking or nodding head when it obviously means yes or no.

3. Count the number of times the child answers a question by saying, "I don't know," even if she answers it afterwards.

4. Count the number of times the child obeys or follows the sense of a direction given by the parent in #1.

5. Count the number of times the child initiates speech to others, the number of times the child begins to talk to other people in the form of a question, request, or any statement that is not in response to a question or prompt from the parent. There is no content overlap with anything the parent has just said.

6. Time any pigeon-like movement of the child's head or head and torso (head-nodding).

Family I: Table 4 (Continued)

Categories:

1. Count the number of questions asked or speech prompts given by the parent. Include anything that can be answered verbally by "yes" or "no."
2. Count the number of times the child answers #1.
3. Count the number of times the parent gives a stated direction that requires an observable response. Count a negative direction (e.g., "Stop that!) only if the child is engaged in the activity when he is told "don't."
4. Count the number of times the child obeys #2.
5. Count the number of times the child begins to laugh or giggle. There should be a 2-second pause (one-thousand-one, one-thousand-two) between the end of one time and the beginning of the other before it is counted as two.
6. Count the number of times the child begins to hit his teeth. There should be the same two-second pause described above.
7. Count the number of times the child begins to whoop, whine or scream (NOT in a tantrum!). Use the two-second pause again.
8. Time the child's hitting other objects or his own hands with his hands or another object.
9. Record the amount of time the child spends (a) sitting on tables, (b) standing on chairs or tables, (c) kicking or biting furniture, (d) being under chairs or tables.
10. Time the child's tantrumous behavior including, (a) hitting his head, (b) falling on the floor, (c) running upstairs while crying or screaming (include the time spent upstairs). These can occur in any combination.

a button that would step an associated timing counter once per second as long as the button remained depressed. The definition of a category included whether the behavior to be rated was discrete (the raters being told "to press and immediately release the button each time you see that behavior start") or continuous ("press the button when you see the behavior start and keep the button depressed until you see the behavior end").

By trial and error we found that interjudge agreement was too low (at least early in the rating period) when a rater rated more than four behavior categories. Therefore, it was arranged that each pair of raters rate six categories; each rating four, two of which were the same category for both raters. For example, Rater A might rate categories 1, 2, 3, and 4 while Rater B was rating categories 3, 4, 5 and 6. For the overlapped categories (in this case, 3 and 4) we calculated an interjudge agreement index, either a ratio of the smaller count (of one rater) to the larger count (of the other rater) or, if the larger count were no greater than 5, a difference between the two raters' counts. The pair of raters had to deliver overlapped ratings with an agreement ratio of at least .80 (e.g., 8/10) or an agreement difference no greater than 1 (e.g., 5-4) for the ratings to be accepted (and therefore not requiring the raters to rerate the tape on these categories).

Ratings were done on the tapes until we achieved enough agreement among raters (or until our rating time ran out). Some raters seemed to be poor raters (e.g., not agreeing, not attending to monitor, talking to each other during rating). Since only 6 behavior categories for each family could be rated in a rating period, three rating periods were used. The poorer pairs of raters were rematched for rating period 2 and the best raters were hired for rating period 3. The three rating periods allowed us to obtain reratings of tapes on the categories for which there were no estimates of interjudge agreement and also on the categories for which there were estimates of interjudge agreement which had been obtained with two raters sitting side by side. (Another study should provide for isolation of the raters to prevent talking.)

To avoid our biasing the data, we have reported summary figures which are calculated from all the ratings whether we think they are good or bad. These figures are part of the case reports of the specific families. For each tape rated in each of 3 measuring periods (see video taping procedures above) the arithmetic mean of all ratings of a particular behavior category, the two extreme scores indicating the range, and the number of scores contributing to the mean are reported. All scores were pro-rated so that they represent a constant time period. For home tapes the constant is 40 minutes. Thus the raw scores of tape which contained 39 minutes would be multiplied by 40/39.

It is gratifying to note that of the 135 tapes (9 families) X (3 home tapes + 2 office tapes per family) X (3 measurement periods) only one tape was not ratable because of technical errors of recording. Some equipment and scheduling complications prevent us from presenting all the tape data at this time. Arrangements are being made to complete this task.

A BEHAVIORAL EVALUATION OF PARENT-CHILD INTERACTION FROM VIDEO TAPE RECORDINGS

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The problem accepted by the authors was to evaluate the results of an experimental program of family therapy. The problem had been posed to the senior author in a letter from Leopold Walder:

> "During the past year our therapeutic teams have been investigating the efficacy of various programs for treating the problems of severely disturbed children. Prior to the time of our work with them, some of the children in our research had been diagnosed as "schizophrenic," "autistic," "retarded," "mental defective," "emotionally disturbed," etc. While working with the children, we employed several data gathering procedures. One procedure was to make video tape recordings during three measurement periods before and after the two treatment periods. These 40-minute video tapes were recorded in the homes of the families as well as in our offices at the University of Maryland. They show father-child interactions, mother-child interactions, mother-father-child interactions, and a general interaction of the family at home....One aspect of our evaluation will require rating the video tape recordings of the children and their families....We expect that the people who agree to rate the tapes will describe and use their own rating system to provide outcome data from the video tapes. Of course, the tapes will be selected in a manner which balances across measurement periods and families, so that the raters view the same number of tapes of each family from the three measurement periods. (See Table 1 which designates the minimum number and kinds of video tapes to be rated.)
>
> "We expect that there will be 54 video tapes to be rated over a period of three weeks....The 54 video tapes consist of two tapes of each of nine families

> for each of the three measurement periods. One of the two video tapes of each family from each measurement period shows standardized interactions between (a) mother and child, (b) father and child, and (c) father, mother, and child recorded in our offices at the University of Maryland. The other tape, determined by the flip of a coin, will be either a mother-child interaction or a father-child interaction recorded in the home of the family. Raters are free to view the tapes as often as and whenever they wish, and are also free to view different types of child-parent interactions in groups of three tapes, one from each measurement period. Table 1 is enclosed to clarify the tape viewing responsibilities of the raters...."

INSERT TABLE 1 HERE

Thus, the basic data presented for evaluation were 54 video tapes, in 9 family sets of 6 each. Every set of 6 contained two trios: three tapes representing home-based interactions across the three measurement periods, and three tapes representing clinic-based interactions across the three measurement periods. No tape was identified for the raters in terms of when it was made (i.e., during which measurement period), or in terms of what kind of therapy that family had undergone or would later undergo. It was always apparent, of course, whether the tape had been made in the clinic or in the home.

Behavior Categories. Inspection of a sample of the tapes showed that there was little consistent structure determining the content of the interaction to be seen throughout the tapes. In some cases, a parent spent much time asking a child to name various objects; in others, a parent read to a child; in others, the parent and child played together (but in different ways in different tapes). However, evaluation of all nine families would, of course, require similar measures to be made of each, especially if all nine were to be involved in an overall experimental design. Because of this limitation, because of the identification of the children as "autistic," "disturbed," etc., and because of the identification of the project as "family therapy," it was decided to develop rating definitions of the following classes of behavior:

1. Social interaction between child and parents. It was assumed that children described as "autistic," "schizophrenic," etc., would frequently show deficits in this area, and that their parents might display little tendency to attempt the maintenance of social interaction with their children. For purposes of video taping, parents had been told to keep attempting interaction with their child; thus, what needed emphasis in the definition of this category was their success in actually producing an interaction, one in which the child obviously responded to the parent.

Table 1. Minimum number of tapes to be rated

		Measurement Period 1	Measurement Period 2	Measurement Period 3
Family 1 *(I)	(a)	U. of Md. tape	U. of Md. tape	U. of Md. tape
	(b)	father-child	father-child	father-child
Family 2 (C)	(a)	U. of Md. tape	U. of Md. tape	U. of Md. tape
	(b)	mother-child	mother-child	mother-child
Family 3 (F)	(a)	U. of Md. tape	U. of Md. tape	U. of Md. tape
	(b)	father-child	father-child	father-child
Family 4 (H)	(a)	U. of Md. tape	U. of Md. tape	U. of Md. tape
	(b)	mother-child	mother-child	mother-child
Family 5 (A)	(a)	U. of Md. tape	U. of Md. tape	U. of Md. tape
	(b)	father-child	father-child	father-child
Family 6 (D)	(a)	U. of Md. tape	U. of Md. tape	U. of Md. tape
	(b)	mother-child	mother-child	mother-child
Family 7 (G)	(a)	U. of Md. tape	U. of Md. tape	U.of Md. tape
	(b)	father-child	father-child	father-child
Family 8 (B)	(a)	U. of Md. tape	U. of Md. tape	U. of Md. tape
	(b)	mother-child	mother-child	mother-child
Family 9 (E)	(a)	U. of Md. tape	U. of Md. tape	U. of Md. tape
	(b)	mother-child	mother-child	mother-child

Note: Raters are free to look at more tapes of different types of interactions.

*Letter designation inserted here (by L.O. Walder) to coordinate with labels of families used in other parts of this final report. It was not in the letter sent to D. M. Baer.

2. Self-stimulatory behavior by the child. The repetitive and frequently bizarre mannerisms sometimes displayed by children so labelled (and very often displayed by the children of these nine families) are sometimes interpreted as signs of disturbance, sometimes as socially reinforced behaviors, and sometimes as the simple behavioral result of an organism with little else to do. In any case, these behaviors easily can affect the response of spectators, so that they react to the child as "crazy." Thus, these behaviors might well be scored in any therapy program dealing with such children.

3. The explicit use of reinforcement by the parents. To the extent that any course of family therapy is based on behavioral principles, it would be reasonable to expect that the parents' clear displays of approval, pride, and affection toward their child, as well as their giving of prizes, would be affected. Even a therapy not based on behavioral principles might produce an indirect outcome in the parents' explicit use of reinforcement. Thus, the frequency of such reinforcement is worth measuring.

4. The timing of all potential reinforcement. It is usually assumed that the amount of reinforcement available to a child is much less important in determining his behavioral development than are the contingencies with behavior into which that reinforcement falls. Furthermore, it is often seen that virtually any form of parental attention can function as social reinforcement for a child. Thus, to evaluate the potential effectiveness of a parent in improving a child's behavior, it should be important to measure how often the parent invests both explicit reinforcement and the subtler forms of attention as consequences of desirable child behavior and as consequences of undesirable child behavior, and how often the parent fails to invest any potential reinforcement as a consequence of desirable child behavior.

The behavioral definitions of these behavior classes are listed in Table 2.

INSERT TABLE 2 HERE

The seven behavior classes listed in Table 2 were recorded by the authors as they watched the video tapes of each session. Each class was recorded in terms of either the frequency, duration, or both, observed per 40-minute session. While watching the video monitor, the authors operated panels of push-buttons. These push-buttons delivered either a single pulse, or a continuing train of 1-second pulses, to counters in another room. Thus, one counter would record how often a given push-button had been depressed, and another would record how long (in seconds) it had been depressed. One rater operated the four push-buttons corresponding to Child-Initiated Social Interaction, Parent-Initiated Social Interaction, Self-Stimulation, and Explicit Reinforcement; the other operated the three push-buttons corresponding to Correct Potential Reinforcement, Incorrect Potential Reinforcement, and Failure to Use Reinforcement.

TABLE 2

DEFINITIONS OF CHILD AND PARENT BEHAVIORS

SOCIAL INTERACTION	INCLUDED: child looks at, holds on to, handles, or vocalizes toward parent child accepts object from or gives object to parent child complies (or tries to comply) with parent's request child approaches or turns toward parent child plays with parent: catches a ball thrown by parent, falls into parent's arms, takes turn with parent in a game, etc.	Child-Initiated Social Interaction any of the included responses begun by the child after a period of non-interaction by parent
	EXCLUDED: child lies or sits on parent but does not hold, look at, handle or answer parent child vocalizes when not looking at parent (unless content of vocalization is clearly an answer to parent) child moves away from parent (even if at parent's request to bring something, in which case return to the parent with something is rated as interaction) parent moves child through action by pushing, handling, etc. parent reads or talks to child without any response (as listed above) by child any possible interaction in which child is not seen on tape because of camera angle, unless a clear verbal answer to the parent is heard	Parent-Initiated Social Interaction any of the included responses emitted in answer to a response by the parent after a period of non-interaction by child
SELF-STIMULATION	repetitive, stereotyped responses, including hand to face or mouth, inside pants, shirt, blouse, or sweater hand and arm flapping, prancing, jumping in place head banging, hand clapping, object clapping rocking and swaying repetitively repetitive vocalization, giggling or screaming hugging, fondling, or scratching self running repetitively in stable pattern	

TABLE 2 (continued)

EXPLICIT REINFORCEMENT	verbal approval, agreement ("Good," "Yes," etc.) by parent applause, whistles, shouts by parent smiles, kisses, hugs, pats, fondling by parent repetition of child's correct answer by parent candy, prize, or token given child by parent
CORRECT POTENTIAL REINFORCEMENT	any social action by the parent to the child following such desirable behavior by the child, as: social interaction by child (as listed above) compliance with parent's request answering parent's response completing any definable portion of the above stopping self-stimulation for at least 5 seconds
INCORRECT POTENTIAL REINFORCEMENT	any social action by the parent to the child following such undesirable behavior by the child, as: self-stimulation isolate behavior, leaving, or turning away from parent non-compliance with parent's request any social action by the parent to the child which pre-empts possible desirable behavior by the child (e.g., asking child to make a picture puzzle but then placing the pieces before child can attempt correct response)
FAILURE TO USE REINFORCEMENT	Non-interaction of any type by parent when child has just emitted any of the desirable behaviors listed above (within 5 seconds) interaction which occurs so late after the desirable behavior that an undesirable behavior has already begun (in which case both FAILURE TO REINFORCE and INCORRECT REINFORCEMENT would be scored)

Parent-Initiated Social Interaction was recorded in terms of the frequency with which the parent initiated interactions, and the cumulative duration of the resulting interactions, over each 40-minute session. The symbols for these two scores were, respectively, fSI_p and dSI_p.

Child-Initiated Social Interaction was recorded similarly; the symbols for its two scores were fSI_c and dSI_c.

Self-Stimulation was recorded similarly; the symbols for its two scores were fSS and dSS. When Self-Stimulation consisted of regular, repetitive responses, the onset of the chain was recorded as a single frequency count, and its duration was recorded as long as the rhythm was maintained. When the rhythm was broken, the push-button was released; when Self-Stimulation was resumed, the push-button was again depressed and held for as long as the new rhythm was maintained.

Explicit Reinforcement was recorded only as a frequency, i.e., on the assumption that it consisted of a number of discrete events without significant duration. Its symbol was S^r.

Correct Potential Reinforcement was recorded only as a frequency, on the same assumption. Its symbol was C Pot S^r.

Incorrect Potential Reinforcement was recorded only as a frequency, on the same assumption. Its symbol was I Pot S^r.

Failure to Use Reinforcement was recorded only as a freqeuncy, on the same assumption. Its symbol was Fail S^r.

From these ten basic scores, eleven other scores were derived to measure a variety of possible relationships. These are listed in Table 3.

INSERT TABLE 3 HERE

The meaning of most of these derived scores is self-evident; some, however, merit discussion. The Relative Frequency and Relative Duration of Child-Initiated Social Interaction scores were designed to reflect what proportion of the social interactions observed could be credited to the child's initiative. It is not clear what to expect in this regard. It might be assumed that a good outcome of therapy would see the child taking a greater lead in bringing about social interaction with his parents. On the other hand, the essence of therapy might well require that the parent take the initiative in creating special types of interaction with the child. Operant therapy, for example, might be reflected in a tendency of the parent to wait for desirable initiations from the child, and then to respond promptly to these in a reinforcing way. On the other hand, if such initiations by the child were rare, operant therapy might well prescribe that the parent initiate

TABLE 3

SCORES DERIVED FROM THE SEVEN BASIC BEHAVIOR CLASSES DEFINED BY THE RATERS

SCORE	SYMBOL	DEFINITION	FORMULA
Total Frequency of Social Interaction	fSI_T	Sum of fSI_P and fSI_C	$fSI_P + fSI_C$
Total Duration of Social Interaction	dSI_T	Sum of dSI_P and dSI_C	$dSI_P + dSI_C$
Relative Frequency of Child-Initiated Social Interaction	$\% fSI_C$	Ratio of fSI_C to fSI_T	$\frac{fSI_C}{fSI_T}$
Relative Duration of Child-Initiated Social Interaction	$\% dSI_C$	Ratio of dSI_C to dSI_T	$\frac{dSI_C}{dSI_T}$
Mean Duration of Self-Stimulation	dSS	Ratio of dSS to fSS	$\frac{dSS}{fSS}$
Relative Frequency of Self-Stimulation	% fSS	Ratio of fSS to (fSI + fSS)	$\frac{fSS}{fSS + fSI}$
Relative Duration of Self-Stimulation	% dSS	Ratio of dSS to (dSI + dSS)	$\frac{dSS}{dSS + dSI}$
Total Potential Reinforcement	Pot S^r T	Sum of C Pot S^r and Pot S^r	C Pot S^r + Pot S^r
Contingency Ratio	% C Pot S^r	Ratio of C Pot S^r to Pot $S^r{}_T$	$\frac{C\ Pot\ S^r}{Pot\ S^r{}_T}$
Failure Ratio	% Fail S^r	Ratio of Fail S^r to sum of C Pot S^r and Fail S^r	$\frac{Fail\ S^r}{C\ Pot\ S^r + Fail\ Sr}$
Frequency of Desirable Child Behavior	$fDes_C$	Sum of C Pot S^r and Fail S^r	C Pot S^r + Fail S^r

interactions in such a way as to set the occasion for probably desirable behaviors from the child, standing ready to reinforce any of these which then emerged. In any event, it seemed reasonable to examine social interaction from the point of view of what proportion of it could be attributed to child initiations.

The Relative Frequency and Relative Duration of Self-Stimulation scores were designed to reflect what proportion of the child behaviors rated were self-stimulatory. Self-Stimulation was the only category of behavior scored which was completely the child's. Social interaction always included a heavy component of child behavior, but also required parent involvement as well to be scored as such. The other categories rated were primarily (if not exclusively) parent behaviors. Thus, to the extent that it is reasonable to look at self-stimulatory behaviors as a proportion of all child behaviors, the available base for computing this ratio is the sum of self-stimulatory behaviors and social interactions. (Had other categories of child behaviors been scored, they, too, should be included in the denominator of such a ratio.)

The Total Potential Reinforcement score was meant to serve as a rough check on the activity level of the parent in these interactions. The score is a sum of all parent behaviors which are explicitly meant to be reinforcing or, being attentive, are even potentially reinforcing, whether correctly used or not. Thus, the score is a measure of very nearly all the parent behavior exhibited toward the child during these sessions. The score was meant to show only whether there were gross changes in the parent's activity level during these sessions.

The Contingency Ratio score was designed to reflect what proportion of the potentially reinforcing attention of the parent was given as a consequence of desirable behavior by the child. In behavior modification with preschool children conducted by the senior author and his associates (e.g., Baer and Wolf, 1968), it is precisely this proportion which is experimentally manipulated to produce consistent and effective change in child behavior. Thus, the Contingency Ratio assumes that all social interaction between child and parent should be viewed as a set of contingencies between desirable child behavior and parent responsiveness, and undesirable child behavior and parent responsiveness. The Contingency Ratio in particular expresses what proportion of that parent responsiveness was correctly invested, from the point of view of increasing desirable behavior in the child. It is noteworthy that a good deal of parent responsiveness to the child is topographically disapproving. Nevertheless, it was scored as Incorrect Potential Reinforcement (as Table 2 shows). This was done on the assumption that the more likely reinforcing function of any parent attention was positive rather than negative. Thus, when a child began to scream and the parent said, "Don't do that!," and a few seconds later said, "That hurts my ears!" and a few seconds later said, "Now if you keep that up I'm going to spank you!," three additional counts of Incorrect Potential Reinforcement were recorded. It is also noteworthy that a good deal of parent attention is topographically encouraging or directing. Nevertheless, it too was scored as Incorrect Potential Reinforcement, if it followed undesirable behavior by the child. Thus, when the parent asked a child to bring him a toy, if the child stood passively, making no move to find the toy, then the parent saying "Go on!," and a few seconds later saying, "You know what I mean," would be recorded as two additional counts of Incorrect Potential Reinforcement: a social action by the parent following non-compliance with his request (as described in Table 2). However, if the child were moving toward the toy, or picking it up, or bringing it toward the parent, then if the parent were to say, "That's right," it would be recorded as an additional count of Correct Potential Reinforcement and also as an additional count of Explicit Reinforcement. Alternatively, if the parent said, "What was so hard about that?," it would be counted only as Correct Potential Reinforcement, despite the fact that its topography was reproving or sarcastic.

The Failure Ratio was also designed to reflect the efficiency of the parent in using reinforcement, Explicit or Potential, when the child emitted desirable behaviors. The correct base for the Failure Ratio was taken as the sum of all Failures to Use Reinforcement and Correct Potential Reinforcement. Thus, of all properly reinforcable behaviors emitted by the child, the Failure Ratio expresses what proportion of them were not reinforced, explicitly or potentially.

It should be clear that from these tape recordings, it is impossible to verify the reinforcing function of any of the stimuli used by parents. Thus, Explicit Reinforcement can mean only those stimuli conventionally used to be reinforcing: approval, agreement, affection, prizes, and edibles. And Potential Reinforcement can mean only that kind of social responsiveness by the parent which has often been shown to be an effective dimension of reinforcement -- but was not shown to be that here.

This leads to a potential criticism of the design of this study, the outcome of which the authors of this report were asked to evaluate. To the extent that operant therapy was taught to parents (an extent learned by the authors only after their ratings were finished), to that extent experimental identification or verification of all useful stimuli as positive or negative reinforcers should have been a preliminary exercise in each family. This exercise should have been multiple, some facets including explicit expressions of approval, some including prizes and tokens for prizes, some including simple social responsiveness as such, and some concentrating on disapproval and encouragement (as described above) possibly having functions opposite to that assumed by parents. Such exercises would best be conducted as single-subject experimental analyses of selected child behaviors, according to either a reversal or multiple-baseline design (Baer, Wolf, and Risley, 1968). Given such exercises, these tape recordings could be evaluated with fewer qualifying adjectives such as "potential." And parents might then make more effective use of those stimuli found to be reinforcing. (In particular, those parents whose social responsiveness was found to be reinforcing might well have made effective use of time-out from it for undesirable behavior from their children: very little use of such time-out was evident in any of the tape recordings.)

The Frequency of Desirable Child Behavior score is an indirect measure of child behavior. It is calculated as the sum of

Correct Potential Reinforcement and Failure to Use Reinforcement. Thus, it reflects how many times the child emitted behaviors that should have been reinforced (according to the criteria of desirable behavior listed in Table 2), from the point of view of the parent's ability to reinforce. A measure aimed directly at the child, with the rater ignoring the ability of the parent to offer reinforcement, would have been very similar, but not identical to this score; however, such a direct measure of desirable child behavior was not taken by the authors, and the sum of C Pot S^r and Fail S^r was used as an indirect but probably accurate criterion.

Rating Reliability. The reliability of the authors in making the seven basic ratings described in Table 2 was examined by collecting nine samples of joint recording of each score, and calculating the product-moment correlation of the pairs of scores produced. Parent-Initiated Social Interaction, Child-Initiated Social Interaction, Self-Stimulation, and Explicit Reinforcement were scored jointly for nine samples; then Correct Potential Reinforcement, Incorrect Potential Reinforcement, and Failure to Use Reinforcement were scored jointly for another nine samples. This combination of simultaneous recording of several scores paralleled the rating that would be done when the tape recordings were evaluated later (one rater recording the first four categories, the other the last three). The samples were taken from randomly selected tapes of three different families, and lasted between 15 and 20 minutes each. The product-moment correlations derived are presented in Table 4.

TABLE 4

RELIABILITIES (PRODUCT-MOMENT CORRELATIONS) OF TWO RATERS FOR SEVEN BASIC BEHAVIOR CATEGORIES

BEHAVIOR	r
fSI_p	.96
fSI_c	.93
dSI_p	.96
dSI_c	.90
fSS	.97
dSS	.98
S^r	.99
C Pot S^r	.99
I Pot S^r	.94
Fail S^r	.91

These rating reliabilities were judged satisfactory for purposes of analyzing the video tape recordings. Subsequent to that judgment, the tapes were examined and rated systematically. All six tapes of each family were rated on a given day, the three home-based tapes on one half-day, and the three clinic-based tapes on the other half-day. The tapes were viewed in a random order, in terms of when in the course of therapy they had been made. The nine cases were examined (one per day) in an order determined by Leopold Walder but not explained by him until after all ratings had been completed.

Special Problems in Rating. In viewing as complex a performance as social interaction, it is not a perfectly obvious matter when an interaction has begun and when it has ended. If, for example, the parent says, "I've got an idea!" and the child turns toward him, according to the criteria of Table 2, Parent-Initiated Social Interaction would be scored as a single frequency count, with duration lasting at least as long as the child continued to look directly at the parent. If then the parent said, "Bring me my guitar," and the child turned away, Table 2 would require the duration to be considered at an end -- even though it was entirely possible that the child had turned away to look for the guitar. If indeed the child were engaged in a search for the guitar, then that search should have been recorded as continuing social interaction. But there is no reliable way for observers to know that that is the nature of the child's turning away. Therefore, the turning away is considered both non-interaction and undesirable behavior (and thus attention to it by the parent would be recorded as Incorrect Potential Reinforcement). If, however, the child arrives at the guitar and begins to pick it up, that constitutes evidence that he is indeed under control of the parent's request, and social interaction (parent-initiated, of course, because it is the parent's original request which apparently has determined this interaction) would be recorded. (Attention now to the child's behavior would thus be recorded as Correct Potential Reinforcement, because this is a desirable behavior -- social interaction.)

If the parent said, "I've got an idea!" and the child turned toward him, then, as described above, that would be recorded as social interaction. If, however, the parent said nothing else, and the child's gaze began to wander about the scene, then as soon as that was clear to the observers, social interaction duration would be considered at an end. If the child then turned back to the adult, and the adult responded to the child in some way, that would be scored as Child-Initiated Social Interaction.

Although it is implicit in the definitions and descriptions already given, it may be worthwhile to emphasize that repetitions of a request made when a child is displaying no tendency to comply with the original request will all be scored as Incorrect Potential Reinforcement; if these repetitions have any social reinforcement value, they are contributing to non-compliance.

Self-stimulation was scored in a very inclusive manner in this system. However, the tape recordings revealed a wide variety of self-stimulatory topographies, some of which were very ordinary. If a child rested his head on his hand, or cupped his chin in his palm, that was scored as self-stimulation for as long as it endured. It is, of course, a very ordinary form of self-stimulation, seen frequently in virtually everyone. It might well prove profitable, in future applications of this rating category, to break self-stimulation into two components: ordinary and extraordinary. "Ordinary" would include only such everyday self-stimulations as head resting, scratching, and arm-folding; "extraordinary" self-stimulation would be reserved for the bizarre flapping, prancing, screaming, giggling, and fingering behaviors frequently evident among the nine children of these video tape recordings.

Results. After the ratings had been completed, the basic design of the study was explained; the data then were tabled and graphed according to that design, and analyzed for meaning and statistical significance. The design was essentially a factorial design involving three groups differing in the timing and nature of the treatment applied, each group nevertheless being tape-recorded at the same three measurement periods over the course of the program. Each group consisted of three families. Group A had been subjected to no therapy between Measurement Periods 1 and 2, and had experienced operant therapy between Measurement Periods 2 and 3. Group B had been subjected to non-operant therapy between Measurement Periods 1 and 2, and then had been subjected to operant therapy between Measurement Periods 2 and 3. Group C had been subjected to operant therapy between Measurement Periods 1 and 2, and (in two cases out of three) had continued on in a variant of operant therapy between Measurement Periods 2 and 3. Tables 5 and 6 present means for Groups A, B, and C across the three Measurement Periods, for each of the 21 scores involved in this evaluation, separately for home-based and clinic-based tapes. These same means are graphed in Figures 1 and 2. (It should be noted that in Table 6 and Figure 2, showing clinic-based data, Group A contains only two families for Measurement Period 1. The tape displaying the third family's interaction during Measurement Period 1 was incorrectly recorded and consequently was not viewable. For purposes of analysis of variance, the missing data were inserted as scores equal to the mean of that cell, in each case of analysis of the clinic-based data involving that Measurement Period.)

INSERT TABLES 5 and 6 and
FIGURES 1 and 2 HERE

The data contributing to the means tabled in Tables 5 and 6 were subjected to several analyses of variance. The design of the overall study would seem to require such analysis, yet the assignment of only three subjects to each cell of the design can allow only a pessimistic prospect for the possibility of clearly validating the effectiveness of operant therapy relative to non-operant therapy or no therapy at all. This design pits operant therapy against non-operant therapy only within one pair of subgroups, and operant therapy against no therapy only within another pair of subgroups. Each of these comparisons is limited to a single measurement period (Measurement Period 2). That is, Groups B and C allow a comparison of non-operant and

TABLE 5

MEANS OF 21 RATING CATEGORIES BY GROUPS AND MEASUREMENT PERIODS, FOR HOME-BASED DATA

SCORE: fSI_P

GROUP	MP1	MP2	MP3	Mean
A	102	110	134	115
B	113	99	126	113
C	71	99	151	107
Mean	95	103	137	

SCORE: fSI_C

GROUP	MP1	MP2	MP3	Mean
A	30	36	18	28
B	66	25	49	47
C	25	16	19	20
Mean	40	26	29	

SCORE: fSI_T

GROUP	MP1	MP2	MP3	Mean
A	132	146	118	132
B	179	124	175	159
C	97	114	170	127
Mean	136	128	154	

SCORE: dSI_P

GROUP	MP1	MP2	MP3	Mean
A	298	243	412	318
B	321	218	365	301
C	182	505	527	405
Mean	267	322	435	

SCORE: dSI_C

GROUP	MP1	MP2	MP3	Mean
A	129	76	66	90
B	160	52	152	121
C	35	20	49	35
Mean	108	49	89	

SCORE: dSI_T

GROUP	MP1	MP2	MP3	Mean
A	427	318	479	408
B	481	269	516	422
C	217	525	576	439
Mean	375	371	524	

SCORE: % fSI_C

GROUP	MP1	MP2	MP3	Mean
A	.22	.28	.14	.21
B	.37	.21	.29	.29
C	.20	.14	.11	.15
Mean	.26	.21	.18	

SCORE: % dSI_C

GROUP	MP1	MP2	MP3	Mean
A	.34	.33	.14	
B	.45	.21	.29	
C	.23	.11	.14	
Mean	.34	.22	.19	

SCORE: fSS

GROUP	MP1	MP2	MP3	Mean
A	70	88	98	85
B	92	127	65	95
C	102	107	107	105
Mean	88	107	90	

SCORE: dSS

GROUP	MP1	MP2	MP3	Mean
A	237	178	209	208
B	202	390	203	265
C	578	473	580	544
Mean	339	347	331	

SCORE: dSS

GROUP	MP1	MP2	MP3	Mean
A	3.0	2.1	2.2	2.4
B	2.1	3.4	3.2	2.9
C	5.7	4.4	5.4	5.2
Mean	3.6	3.3	3.6	

SCORE: % fSS

GROUP	MP1	MP2	MP3	Mean
A	.34	.35	.47	.39
B	.35	.50	.26	.37
C	.53	.45	.39	.46
Mean	.41	.43	.37	

TABLE 5 (continued)

SCORE: % dSS

GROUP	MP1	MP2	MP3	Mean
A	.33	.45	.43	.40
B	.37	.62	.28	.42
C	.73	.58	.53	.61
Mean	.48	.55	.41	

SCORE: S^r

GROUP	MP1	MP2	MP3	Mean
A	35	37	60	44
B	16	10	55	27
C	16	52	97	55
Mean	22	33	71	

SCORE: C Pot S^r

GROUP	MP1	MP2	MP3	Mean
A	87	87	169	114
B	72	80	203	118
C	66	96	158	107
Mean	75	88	177	

SCORE: I Pot S^r

GROUP	MP1	MP2	MP3	Mean
A	226	238	187	217
B	225	217	127	190
C	187	192	178	186
Mean	213	216	164	

SCORE: Pot $S^r{}_T$

GROUP	MP1	MP2	MP3	Mean
A	313	325	356	331
B	297	297	330	308
C	253	289	336	293
Mean	288	304	341	

SCORE: Fail S^r

GROUP	MP1	MP2	MP3	Mean
A	45	43	28	39
B	38	59	32	43
C	53	43	27	41
Mean	45	48	29	

SCORE: % C Pot S^r

GROUP	MP1	MP2	MP3	Mean
A	.26	.25	.42	.31
B	.26	.30	.63	.40
C	.27	.40	.49	.39
Mean	.26	.32	.51	

SCORE: % Fail S^r

GROUP	MP1	MP2	MP3	Mean
A	.51	.45	.26	.41
B	.27	.45	.14	.29
C	.47	.31	.15	.31
Mean	.42	.40	.18	

SCORE: $fDes_C$

GROUP	MP1	MP2	MP3	Mean
A	134	121	207	154
B	101	138	235	158
C	119	139	185	148
Mean	118	133	209	

TABLE 6

MEANS OF 21 RATING CATEGORIES BY GROUPS AND MEASUREMENT PERIODS, FOR CLINIC-BASED DATA

SCORE: fSI_P

GROUP	MP1	MP2	MP3	Mean
A	112	90	113	105
B	71	85	110	90
C	118	106	112	112
Mean	100	94	112	

SCORE: fSI_C

GROUP	MP1	MP2	MP3	Mean
A	73	30	38	47
B	49	33	55	46
C	38	48	43	43
Mean	53	37	45	

SCORE: fSI_T

GROUP	MP1	MP2	MP3	Mean
A	185	120	151	152
B	119	118	165	134
C	155	154	155	155
Mean	153	131	157	

SCORE: dSI_P

GROUP	MP1	MP2	MP3	Mean
A	138	194	327	220
B	373	249	271	298
C	171	159	354	228
Mean	227	201	317	

SCORE: dSI_C

GROUP	MP1	MP2	MP3	Mean
A	122	50	62	78
B	379	94	270	248
C	62	70	62	65
Mean	188	71	131	

SCORE: dSI_T

GROUP	MP1	MP2	MP3	Mean
A	260	244	389	298
B	752	343	541	545
C	233	228	416	292
Mean	415	272	449	

SCORE: $\% fSI_C$

GROUP	MP1	MP2	MP3	Mean
A	.39	.25	.17	.27
B	.42	.27	.37	.35
C	.26	.41	.30	.32
Mean	.36	.31	.28	

SCORE: $\% dSI_C$

GROUP	MP1	MP2	MP3	Mean
A	.47	.27	.13	.29
B	.45	.31	.44	.40
C	.29	.40	.38	.36
Mean	.40	.33	.32	

SCORE: fSS

GROUP	MP1	MP2	MP3	Mean
A	43	87	86	72
B	129	141	119	130
C	100	99	102	100
Mean	91	109	102	

SCORE: dSS

GROUP	MP1	MP2	MP3	Mean
A	136	365	261	254
B	303	405	182	297
C	823	736	722	760
Mean	421	502	388	

SCORE: dSS

GROUP	MP1	MP2	MP3	Mean
A	3.0	4.9	2.8	
B	2.2	4.0	1.9	
C	7.1	7.0	7.5	
Mean	4.1	5.3	4.1	

SCORE: % fSS

GROUP	MP1	MP2	MP3	Mean
A	.20	.44	.39	.34
B	.47	.52	.38	.46
C	.39	.41	.40	.40
Mean	.35	.46	.39	

TABLE 6 (continued)

SCORE: % dSS

GROUP	MP1	MP2	MP3	Mean
A	.36	.61	.39	.45
B	.40	.59	.28	.42
C	.68	.72	.60	.67
Mean	.48	.64	.42	

SCORE: S^r

GROUP	MP1	MP2	MP3	Mean
A	13	21	66	33
B	27	13	71	37
C	21	62	50	44
Mean	20	32	62	

SCORE: C Pot S^r

GROUP	MP1	MP2	MP3	Mean
A	43	81	161	95
B	129	66	184	126
C	95	134	117	115
Mean	89	94	154	

SCORE: I Pot S^r

GROUP	Mp1	MP2	MP3	Mean
A	173	228	155	185
B	156	220	89	155
C	170	114	118	134
Mean	166	187	121	

SCORE: Pot $S^r{}_T$

GROUP	MP1	MP2	MP3	Mean
A	228	314	334	292
B	285	286	240	270
C	265	248	289	267
Mean	259	283	288	

SCORE: Fail S^r

GROUP	MP1	MP2	MP3	Mean
A	59	56	58	58
B	41	49	31	40
C	66	48	36	50
Mean	55	51	42	

SCORE: % C Pot S^r

GROUP	MP1	MP2	MP3	Mean
A	.28	.28	.51	.36
B	.49	.22	.66	.46
C	.36	.54	.47	.46
Mean	.38	.35	.55	

SCORE: % Fail S^r

GROUP	MP1	MP2	MP3	Mean
A	.52	.47	.47	.49
B	.34	.45	.18	.32
C	.47	.28	.25	.33
Mean	.44	.40	.30	

SCORE: $fDes_C$

GROUP	MP1	MP2	MP3	Mean
A	114	142	237	164
B	147	108	201	152
C	161	181	152	165
Mean	141	144	197	

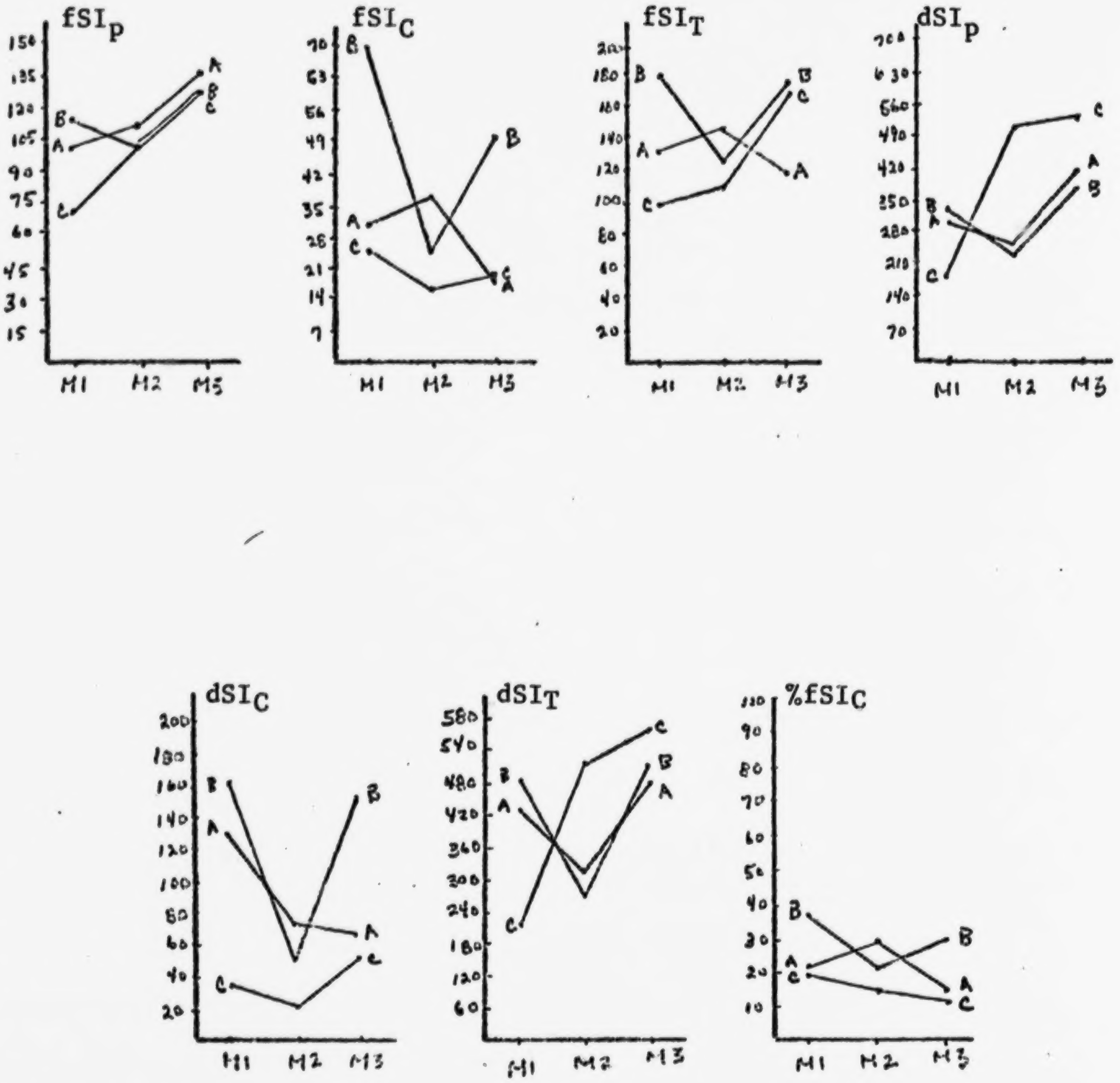

Figure 1: Rating of Home video tapes

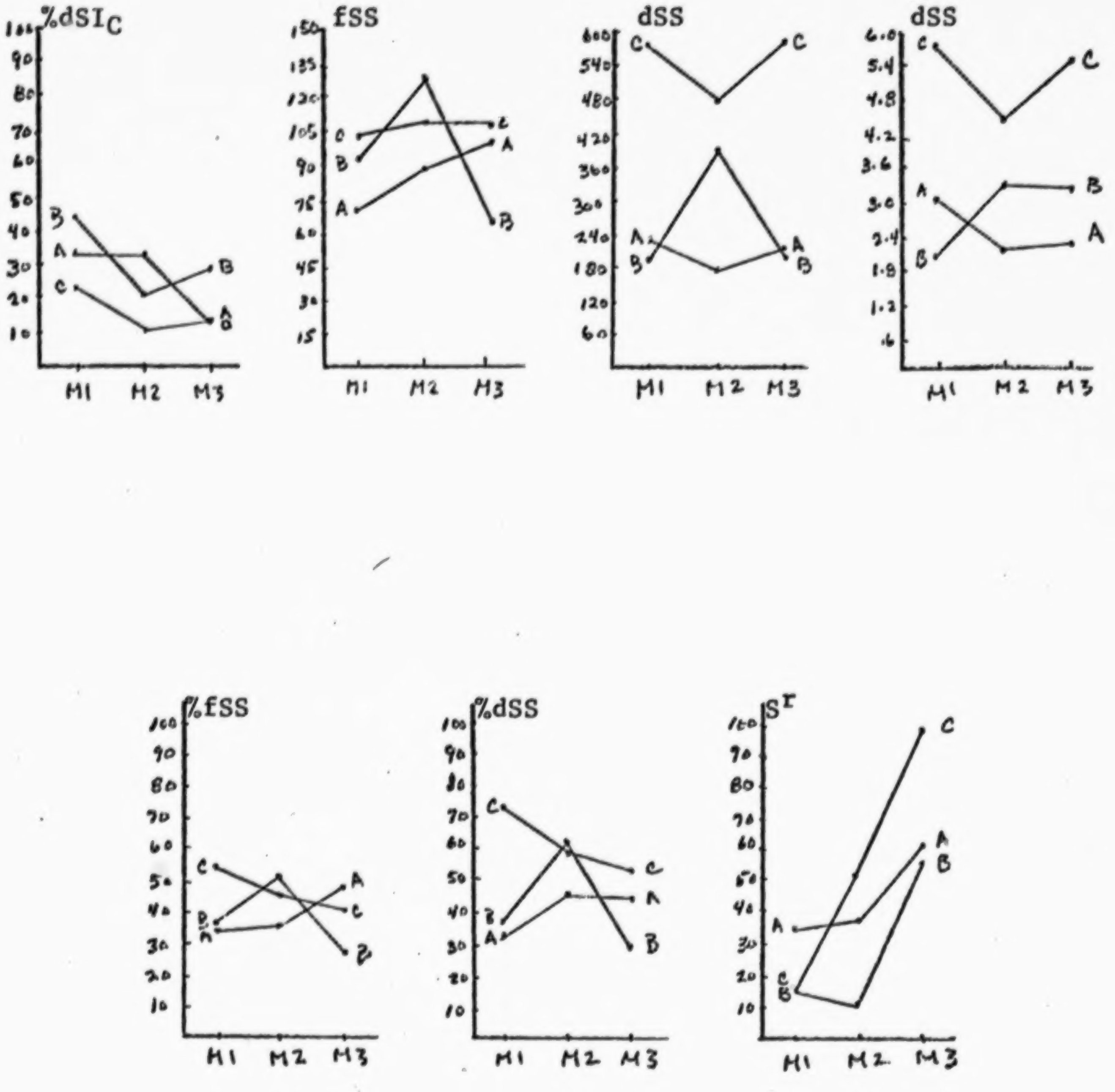

Figure 1: Continued

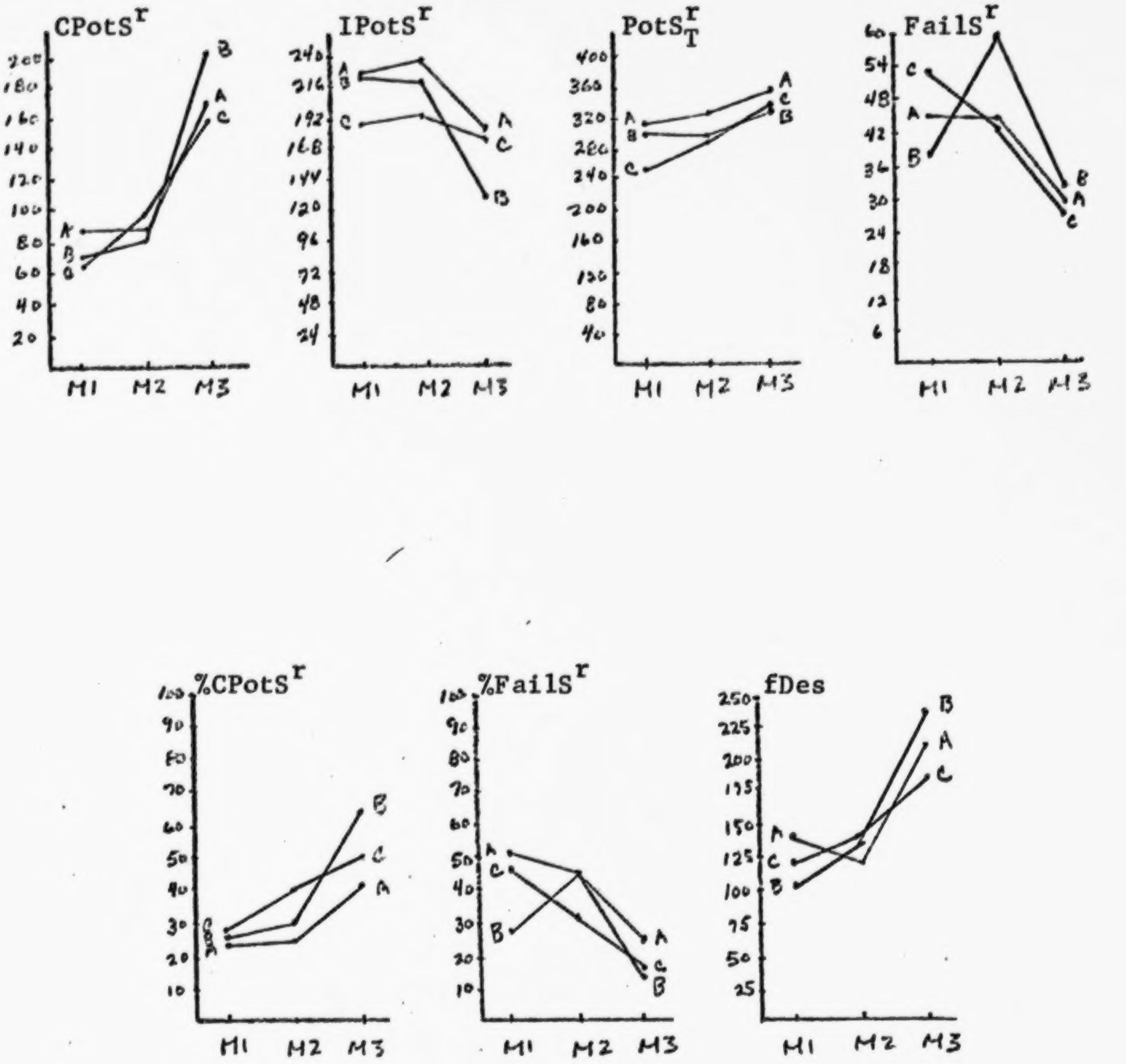

Figure 1: Continued

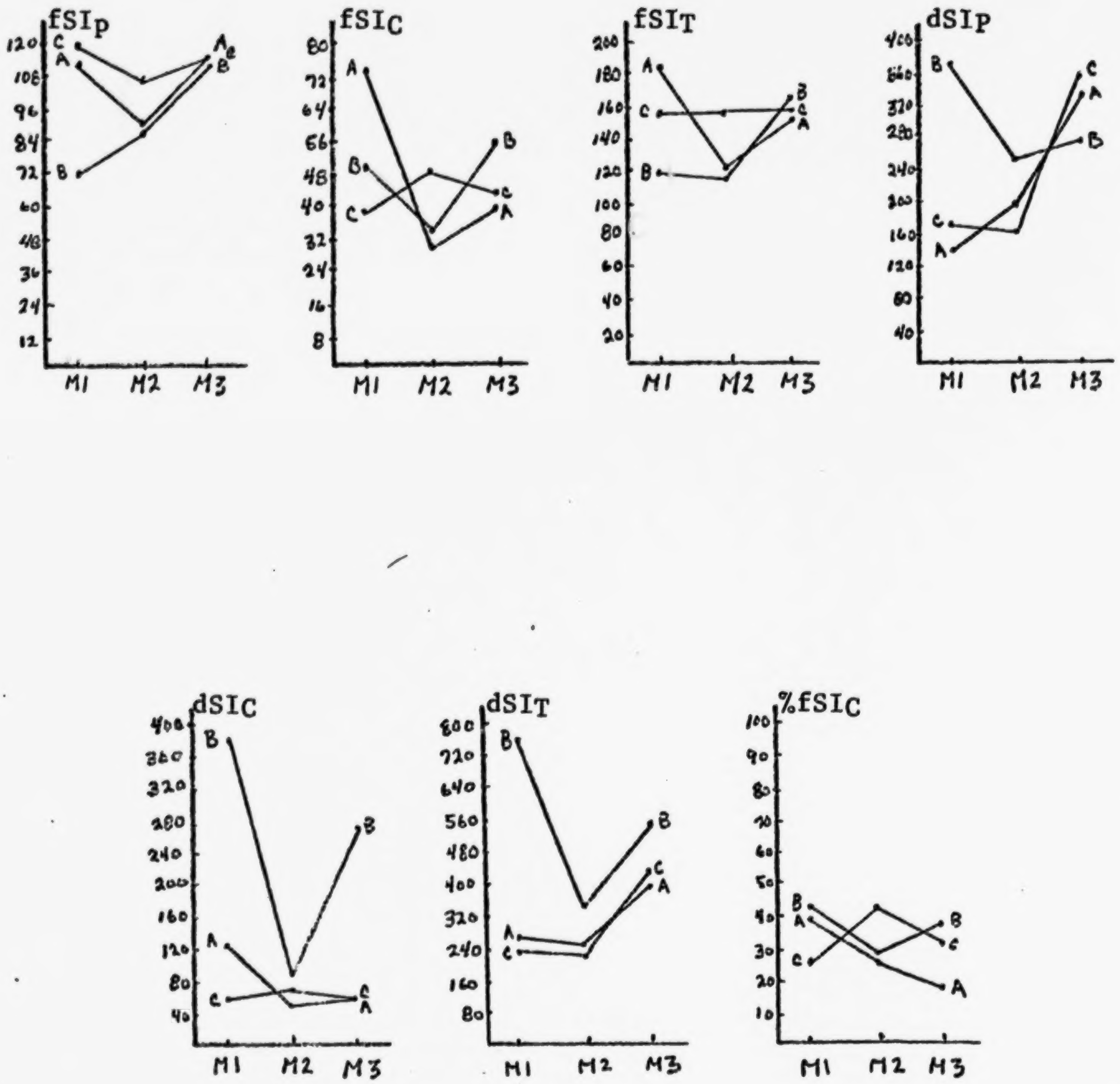

Figure 2: Rating of Clinic video tapes

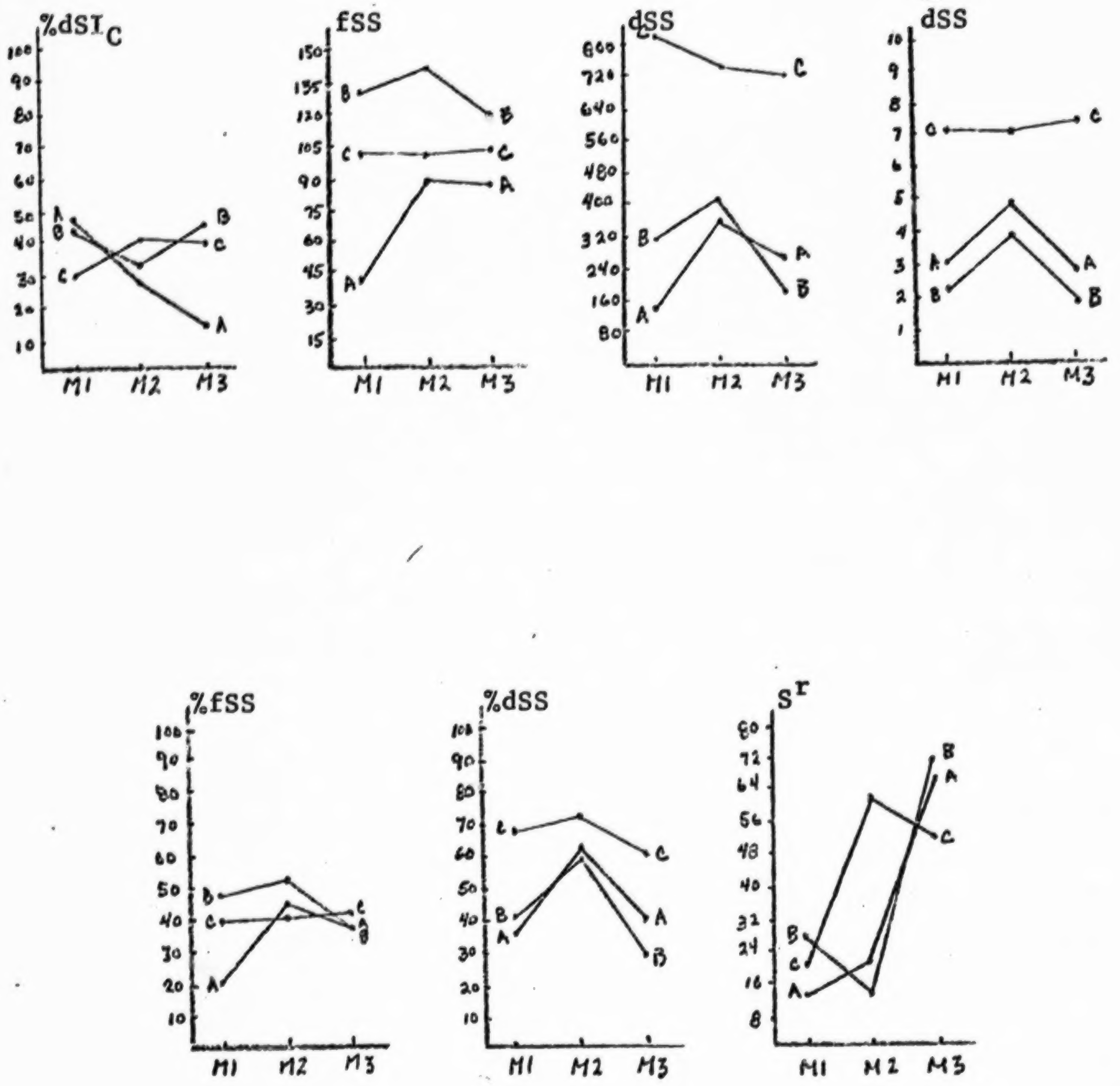

Figure 2: Continued

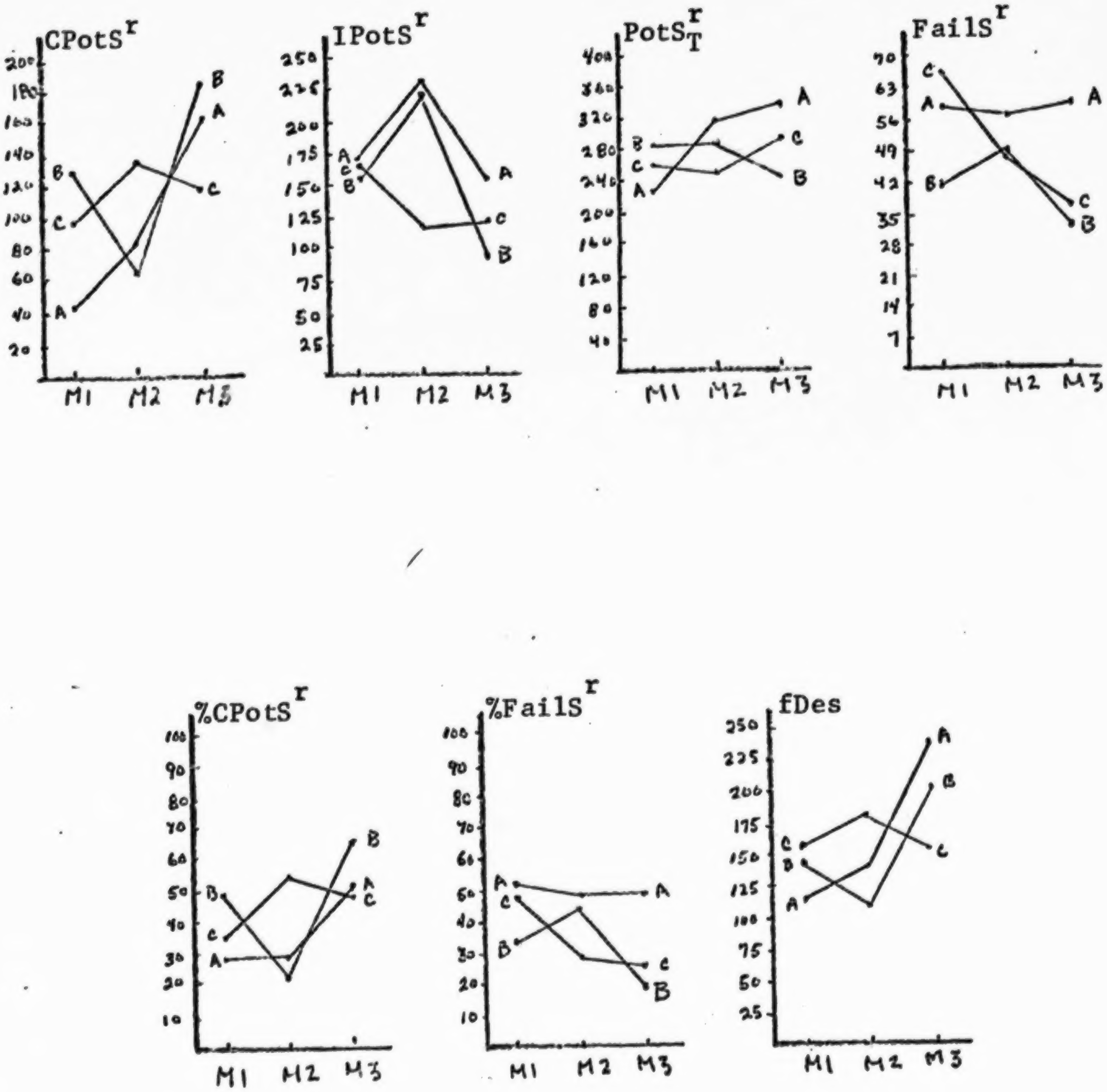

Figure 2: Continued

operant therapy effects at Measurement Period 2; Groups A and B allow a comparison of non-operant therapy effects with the results of no therapy at Measurement Period 2; and Groups A and C allow a comparison of operant therapy effects with the results of no therapy at Measurement Period 2.

All groups were subjected to operant therapy between Measurement Periods 2 and 3; but at that point they differed in terms of their prior histories, in terms of the precise type of operant therapy applied or available, in terms of the degree to which they availed themselves of that therapy, and in terms of the expertness of the therapists supplying the training.

Thus, the simplest and most readily interpreted design is one restricted to the progress of Groups A, B, and C across Measurement Periods 1 and 2, ignoring the subsequent treatment intervening between Measurement Periods 2 and 3. That fraction of the total study allows a comparison of change resulting from a period of waiting, a period of non-operant therapy, and a period of operant therapy, the periods all comparable in terms of time and in terms of the newness of the parents and children to the therapy program. However, it must be repeated that although this design is logically sound, the investment of only three subjects into each of its groups represents a very risky research venture. If only nine families could be studied, a simpler comparison of operant therapy and no therapy might well have stood a better chance of making at least some points, with four or five families per group, than does the present design with its three participants per group.

If groups A, B, and C are examined only for Measurement Periods 1 and 2, then the simplest way of analyzing the differential effects of operant therapy, non-operant therapy, and no therapy would focus on the changes each family showed between Measurement Period 1 and Measurement Period 2. Consequently, difference scores were calculated as (Measurement Period 2 - Measurement Period 1) for each family, for each rating score, separately for home-based and clinic-based data. These were subjected to a one-way analysis of variance (Edwards, 1960). Differential effects of operant therapy, non-operant therapy, and no therapy would, if large and consistent enough, lead to significant F ratios and prompt finer examination of the trend of group changes.

The results of this analysis showed only a few scores which displayed differential patterns of change that could be considered statistically reliable at the 5% level or close to it. No such scores emerged from the analysis of home-based data. From the clinic-based observations, the most clearly reliable outcome (at the 5% level) was seen in the Incorrect Potential Reinforcement score (I Pot S^r). Reference to Table 6 and Figure 2 will show that Groups A and B, experiencing no therapy and non-operant therapy respectively showed marked increases in their rates of using potential reinforcement incorrectly, while Group C, experiencing operant therapy, decreased just as markedly. Another score, the Contingency Ratio (% C Pot S^r), approached the 5% level but did not achieve it. It showed a somewhat similar pattern of relationship among the three groups: Group A (no therapy) had a stably low proportion of correctly used potential reinforcement;

Group B (non-operant therapy) declined from a 50% correct ratio to less than half that; and Group C (operant therapy) increased from a fairly low ratio to one just exceeding 50% correct.

Inspection of Tables 5 and 6, and Figures 1 and 2, will show that a number of other scores at least display more or less similar patterns of difference among the three groups; however, these patterns do not achieve or closely approach statistical significance. The scores displaying these patterns most consistently in either home- or clinic-based data (or both) are Explicit Reinforcement (S^r), Correct Potential Reinforcement (C Pot S^r), Incorrect Potential Reinforcement (I Pot S^r), Failure to Use Reinforcement (Fail S^r), Failure Ratio (% Fail S^r), Frequency of Desirable Child Behavior, Total Duration of Social Interaction (dSI_T), and Relative Duration of Self-Stimulation (% dSS). In these cases, the pattern of change is one which shows a desirable effectiveness of operant therapy: increasing social interaction, decreasing self-stimulation, increasing rates of desirable behavior by the child. Some of these data also display changes during non-operant therapy which are less than desirable, relative to no therapy: decreases in social interaction, increases in self-stimulation and decreasingly accurate use of potential and probable reinforcement by parents. However, none of these changes can be validated statistically as reliable. Thus, these data serve primarily not to document the effectiveness of operant therapy relative to several alternatives (for even those findings that are statistically significant are so few in number as to be suspect); rather, they set the occasion for future replication. If the same pattern were to remain stable as more families are studied, they would, of course, become statistically valid. The frequency with which these patterns appear in the data (despite lack of statistical significance) reinforce the view that many of them would prove stable upon replication.

Groups A, B, and C can also be examined in terms of their change from Measurement Period 2 to Measurement Period 3. During that time, all groups were subjected to operant therapy. They also differed in a number of ways, as discussed earlier. Even so, difference scores were calculated as (Measurement Period 3 - Measurement Period 2), to show whether the changes of the nine families were in a desirable direction, and large and stable enough to support statistical significance. If so, that could testify to the effectiveness of the operant therapy applied during this period. It could also testify to the effects of time, and anything else confounded with that time. Whereas the preceding analysis of Groups A, B, and C over Measurement Periods 1 and 2 controlled for such confounding, this analysis of the mean change of all families from Measurement Period 2 to 3 does not. Nevertheless, the analyses were made, using a $\underline{t}$ test for paired observations (Hays, 1963). A number of changes were found to be significant at the 5% level; these are listed in Table 7 for home-and clinic-based data separately. (Entries marked by asterisk are significant only by a one-tailed test.) In general, these differences support the possibility that operant therapy leads to desirable changes in both child and parent behavior, especially in the form of increased rates of desirable behavior from the children and increased accuracy and efficiency in their use of probable and potential reinforcement by the parents.

INSERT TABLE 7 HERE

An analysis of variance of the total design -- Groups A, B, and C over Measurement Periods 1, 2, and 3 -- is, of course, possible. The differential effects of operant therapy ideally would emerge as interaction between Groups and Measurement Periods. The general effectiveness of operant therapy could also be reflected in a Measurement Periods main effect, in that operant therapy operated for one group (C) between Measurement Periods 1 and 2 and for all groups between Measurement Periods 2 and 3. However, events other than operant therapy, confounded with time, also could contribute to such a main effect. Similarly, the effects of operant therapy would be seen in a Groups main effect, considering that Group C underwent such therapy twice as long as Groups B and C, assuming, of course, that the longer such therapy goes on, the more pronounced its effects would be. However, a Groups main effect could also testify to a failure of random sampling to assign three comparable cases to each group initially -- a failure easy to come about when only nine families are to be allotted to three groups. Or -- just possibly -- a Groups main effect might reflect the effects of the non-operant therapy applied to Group B between Measurement Periods 1 and 2, especially if that therapy could produce enduring effects on Group B that would still be seen between Measurement Periods 2 and 3. Logically, however, it would seem that the interactions between Groups and Measurement Periods should be the most easily interpretable testimony to the differential effects of operant therapy.

Unfortunately, the results of a Lindquist Type 1 analysis (1953) of Groups A, B, and C over Measurement Periods 1, 2, and 3 yielded only two statistically reliable interactions, both from clinic-derived data. One of these was the Incorrect Potential Reinforcement score (1 Pot S^r), which the previous analysis of Measurement Periods 1 and 2 also had pointed to as a clear measure of differential effects. At the 2.5% confidence level, this score displayed a pattern of marked increase in Groups A and B during their respective periods of no therapy and non-operant therapy, followed by clear decreases in both groups following the introduction of operant therapy. Meanwhile, Group C had responded promptly to the application of operant therapy by decreasing its rate of incorrect potential reinforcement, maintaining this level as a variant of that therapy continued between the last two measurement periods. In a fairly similar (but reversed) pattern, the Contingency Ratio also entered into a significant interaction (at the 5% level), as it had almost done in the previous analysis of Measurement Periods 1 and 2. (Because that previous analysis was nested within the present analysis, this consistency of outcome is, of course, not remarkable; however, the present analysis shows the additional results of progress between Measurement Periods

TABLE 7

SCORES SHOWING STATISTICALLY RELIABLE CHANGE FROM MEASUREMENT PERIOD 2 TO MEASUREMENT PERIOD 3

HOME-BASED DATA	CLINIC-BASED DATA
fSI_p *	dSI_T
dSI_T *	% dSS
S^r	S^r *
C Pot S^r	C Pot S^r *
Pot $S^r{}_T$ *	I Pot S^r *
% C Pot S^r	% C Pot S^r
% Fail S^r	% Fail
f Des	f Des *

2 and 3, and thus is not merely redundant with the previous analysis.) Group A showed a markedly improved ratio of correctly used potential reinforcement only after operant therapy had begun; Group B, which had deteriorated considerably in this ratio under non-operant therapy, now showed an even greater improvement than had Group A; and Group C, which had improved when operant therapy was first applied to it, showed a very slight loss in this ratio as the second variant of operant therapy was applied (in two of its three families).

If the pattern of relationship of sub-group means is examined throughout Tables 5 and 6 and Figures 1 and 2, fairly similar conclusions concerning the differential effects of operant therapy are exemplified by various scores representing social interaction, self-stimulation, efficiency of parental use of probable and potential reinforcement, and the rate of desirable child behavior. However, these patterns are not statistically reliable; as before, they serve only to demonstrate a consistency of potential relationship, and so very strongly invite simple direct replication.

Main effects involving the sequence of change over the Measurement Periods emerged reliably from home-based data in the case of the Explicit Reinforcement score (S^r), at the .5% level; the Contingency Ratio (% C Pot S^r), at the .5% level; the Failure Ratio (% Fail S^r), at the 2% level; and the Frequency of Desirable Child Behavior (fDes), at the .5% level. For clinic-based observations, fairly similar main effects were seen in the case of Explicit Reinforcement (S^r), at the 5% level; Incorrect Potential Reinforcement (I Pot S^r), at the .5% level; and the Contingency Ratio (% C Pot S^r) at the .5% level. The Correct Potential Reinforcement score (C Pot S^r) approached significance at the 5% level very closely, but did not quite achieve it. If the patterns of means within Tables 5 and 6 and Figures 1 and 2 are examined, it appears that very much the same pattern of interaction is to be seen as proved statistically significant in the case of Incorrect Potential Reinforcement (I Pot S^r) and the Contingency Ratio (% C Pot S^r) for clinic-based observations. However, despite the similarity of pattern, the variability of the scores contributing to these means is too great to allow a conclusion of interaction.

Three Group main effects emerged. In home-based data, both the Duration of Self-Stimulation (dSS) and Mean Duration of Self-Stimulation ($\bar{d}$SS) scores supported highly reliable effects (1% level). Inspection of Table 5 and Figure 1 will show that these effects must have resulted primarily from the consistently high levels shown by Group C throughout all measurement periods. There is no indication of interaction. Thus, these findings do not contribute to any validation of the differential effects of operant therapy. In the clinic-based data, however, the Failure Ratio (% Fail S^r) also yielded a Groups main effect, at the 1% level. In this case, inspection of Table 6 and Figure 2 will show a pattern partially similar to the interaction that would result from a differential effectiveness of operant therapy: although Group A fails to decline in its failure to use reinforcement correctly after operant therapy is introduced, Group B does so quite markedly (after having shown a mild increase in such failures after non-operant therapy); and Group C, undergoing operant therapy in one form or another throughout, shows a fairly consistent decline in such failures to reinforce desirable behavior, across all measurement periods.

Conclusions. The total array of data presented in Tables 5 and 6, and again in Figures 1 and 2, provides a visual picture which suggests in many ways that operant therapy, as practiced in this study, produced desirable effects when it was applied, relative to no therapy or to a short-term variant of non-operant therapy. Increases in social interaction and in desirable child behaviors in general, relative decreases in self-stimulation, and considerable increases in the accuracy and efficiency of potential reinforcement practices by parents are shown. However, when these data are subjected to conventional statistical analysis, few of the results meet the usual criterion for reliability, especially when the analysis is restricted to that part of the total research design which most satisfactorily controls for potentially confounding variables (i.e., Groups A, B, and C over Measurement Periods 1 and 2). Thus, the results could be described as an impressively repetitive display of highly appropriate trends, few of which need be believed by a cautious audience.

As remarked before, the obvious response to these data is simple, direct replication. If the patterns found here are repeated, even in only two-thirds of the families to which they are applied, then this design with an expanded number of subject-families within it would soon yield thoroughly convincing statistical evidence of certain effects of operant therapy perhaps already measured in these nine cases. Prior to such replication, it seems unlikely that any stronger conclusions can be justified.

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Evaluation of Psychological Testing of the Nine Pairs of Parents

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Psychological testing was a basic part of the experimental design in the Parent Project. There were three three-week testing schedules. The first immediately preceded Treatment 1; the second immediately followed the twelve weeks of Treatment 1 and preceded Treatment 2; the third immediately followed Treatment 2. The treatment and testing design is shown in Table 1.

Table 1

Treatment and Testing Design

	First 3 Weeks Psych. Testing 1	Next 12 weeks Treatment I	Next 3 weeks Psych. Testing 2	Next 12 weeks Treatment II	Last 3 weeks Psych. Testing 3
Group A		Minimal Contact$_1$		Operant$_2$	
Group B		Non-Operant$_1$		Operant$_2$	
Group C		Operant$_1$		Minimal Contact$_2$	

The purpose for including psychological testing was to determine what changes could be expected which would permit assessment of differences resulting from the specific treatment program to which each of the three groups of parents had been assigned. Assessment of change for each parent would be a comparison of the second and third test results with his own initial test results serving as a base line. The study was based on the premise that treatment of behaviorally disturbed children could be affected by changing significant environmental factors. The purpose of the study was to demonstrate the effectiveness of operant principles in the change of the behavior of parents toward their behaviorally disturbed child. The primary goals of the study were improvement in the behavior of the child, improvement in interpersonal relationships between the parents, and improvement in the parents' attitude toward the child. Secondary goals included improvement in self-acceptance, acceptance of responsibility, use of intelligence, outlook, sensitivity toward others, and reduction in defenses. The psychological testing plan and the tests to be used were originally designated by Dr. Paul G. Daston, since deceased. Tests administered in the first testing period were the Michigan Sentence Completion Test, 112 items of the Minnesota Multiphasic Personality Inventory (MMPI), the Caring Relationship Inventory (CRI), Cards 2, 4 and 18GF. of the Thematic Apperception Test (TAT), and Cards 1 through 20 of the Holtzman Inkblot Technique (HIT).

Method

Tests Used

The following tests were administered to all subjects at each of the three testing periods.

1. Sentence Completion Test. The Michigan Sentence Completion Test was administered to the subjects at the first testing. For the second and third testing periods the Forer Sentence Completion Test was used. This change was made because of the standard evaluation method of the Forer. As far as possible, the Michigan Sentence Completion Test was evaluated in accordance with the categories of the Forer.

2. MMPI. The 112 items of the MMPI which were originally administered represented a specific measurement scale on which Dr. Daston had been working. Unfortunately, there was no information available concerning the scale and that test measurement was not used. For the second and third testing periods the full MMPI was given. These were computer scored and computer interpreted.

3. The CRI is a new test which has not as yet been offered for general use. Copies were made available for experimental use in this project. The CRI is a measure of the essential elements of love or caring in human relationships. The inventory consists of 83 items concerning feelings and attitudes of one member of a male and female pair for the other member. Responses of either true or false are made to each of the items, first, as applied to the member of the pair, and the second time as applied to an ideal mate. Two forms are used, one for the male rating the female, and one for the female rating the male. The CRI measures five elements of love, namely, Affection, Friendship, Eros, Empathy and Self-Love. There are also two additional sub-scales, one measuring the concept Being Love and the other measuring the concept Deficiency Love. Scores obtained are compared with those of a normative sample composed of 75 couples who had been successfully married for at least five years. In general, according to the manual for this text, the higher the score in each scale, the healthier would appear to be the relationship in terms of that caring category. It has been hypothesized, however, that excessively high scores may be indicative of unrealistic caring in that particular category. More evidence will be needed before differential interpretation of scores

in various levels above the fiftieth precentile is possible. Scores at the mid point are representative of the average successfully married couple. Scores significantly below the midline may be considered to be indicative of difficulty in that area of the caring relationship. Comparisons can also be made with three populations, namely, a successful married couples group (N = 150), a troubled couples group (N = 100), and a divorced couples group(N = 108). There were no significant differences between male and female results in the CRI scores and all data were pooled for normative purposes. There are provided experimental scores suggested for use in research in making comparisons in various areas.

In addition to an examination of individual scores, three of the experimental score comparisons were used in this study.

(a) The R_{10} score (Reverse ideal-other). This score represents the number of items that were answered differently by one individual for his responses concerning his mate as compared with his responses concerning the ideal mate. It is hypothesized that this score reflects dissatisfaction in the caring relationship which may result from unrealistic expectations.

(b) The O/S ratio (Outward love/Self love) is a ratio of outward loving expressed toward another person as compared with self loving.

(c) The D/B ratio (Deficiency love/Being love). This scale is hypothesized to reflect the nature of the caring relationship. It is hypothesized that the manipulative person loves with proportionately greater "D" and less "B" and thus would be expected to have a higher D/B ratio. The actualizing person is believed to love with relatively greater "B" than "D" and thus would be expected to have a lower D/B ratio. Being a relatively new test with limited norms, the CRI test results were cautiously applied.

4. The TAT cards used in the test varied for each of the three administrations to avoid the practice effect. In the first testing Cards 2, 4 and 18GF were used; in the second testing Cards 7GF, 13MF and 8BM were used; in the third testing Cards 7BM, 6GF and 18BM were used. Cards 2, 7GF and 7BM involve themes dealing with interpersonal relationships between members of younger and older generations. Cards 4, 13MF and 6GF involve themes dealing with heterosexual relationships, and Cards 18GF, 8BM and 18BM deal with aggressive themes. Evaluation of the TAT stories was based on Murray's need theory.

5. The HIT cards were the first twenty of Form A and of Form B. Administration of the three successive testings was alternated. Half of the subjects were given the HIT in the order A - B - A and the other half in the order B - A - B. This alternation would minimize the effect of memory for the blots. The decision to use 20 blots of the HIT rather than the full set was based on speed of administration of the total testing battery. To use the normative data available for the HIT, extrapolated scores were derived for each record by multiplying each score by the ratio of 45/20. The normative sample used was the average adult population.

Test Evaluation

The results of the evaluation of each of the five tests were considered for twelve variables. These variables are concerned with attitudes and personality characteristics. Among the attitudes are the following: (1) attitude toward spouse, (2) attitude toward child, (3) attitude toward self (self concept), (4) attitude toward others, (5) attitude toward responsibility, (6) outlook. The personality characteristics included (1) affect, (2) anxiety and guilt, (3) hostility and aggression, (4) needs, (5) ideational integration, (6) defense mechanism and pathology.

Each of the three testings for each of the 18 subjects represented a test unit. Interpretation of each of the 54 test units was done independently. All tests were numerically coded so that there was no information available concerning the relationship between test unit and subject. Each set contained a Sentence Completion Test, three TAT stories, a Test Record for 20 HIT cards, the CRI and the MMPI. The 54 test units were scored and each unit was evaluated for the twelve variables noted above. After this was done, information was provided to permit grouping the three test units for each of the 18 subjects. Evaluations of the three testings for each subject were compared for changes in each of the twelve variables being studied. After changes for each subject were recorded, full information was provided, including the code numbers of the parents of each family; the three families which comprised the three experimental groups; and the treatment procedure that was administered to each of the three groups. The final evaluation was made of the changes in each of the twelve variables for the three sets of parents in each of the three groups.

Results

Change either in attitude or personality characteristics will be determined by deviations from the findings of the first test assessment as compared with the test assessments after Treatment I and Treatment II.

Attitudinal changes for all groups are shown in Table 2 and personality changes for all groups are shown in Table 3.

Place Tables 2 and 3 here

Changes in Group A[1]

Families A, C, and E in Group A received minimum contact in treatment I and operant counseling in Treatment II.

Family A - parents #7 (mother) and #8 (father). After Treatment I both parents expressed more positive attitudes toward each other and less dissatisfaction with each other. (++for mother;+for father). She showed a more realistic set of expectations of her husband, and an increased ability to consider his needs as well as her own. She was also more able to love him for himself rather than in a manipulative way. He showed greater satisfaction in the caring relationship between him and his wife.

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[1] The following is a reorganization of Dr. Hill's preceding three sections (Changes in Group A, in Group B and in Group C).

TABLE 2

ATTITUDE CHANGES[1]

			1 Toward Spouse		2 Toward Child		3 Toward Self		4 Toward Others		5 Responsibility		6 Outlook	
	Treatment Period:[2]		I	II	I	II	I	II	I	II	I	II	I	II
Group	Family	Parent												
A	A	Mother	++	-	0	0	0	0	0	+	0	0	0	++
		Father	+	--	++	++	0	0	0	0	0	0	0	+
	C	Mother	++	+	0	++	0	0	0	+	0	0	0	+++
		Father	+	---	--	0	0	0	0	0	0	0	0	0
	E	Mother	0	+++	0	+++	0	0	0	0	0	0	0	++
		Father	+	++	0	+	0	0	0	0	0	++	0	0
B	B	Mother	--	+	0	+++	0	0	+	0	0	+	0	0
		Father	0	++	0	0	0	0	0	+	0	--	0	0
	D	Mother	-	+	+	++	0	0	0	0	0	0	0	0
		Father	++	--	0	0	0	0	0	0	0	--	0	+
	I	Mother	+	0	++	0	0	+	0	0	0	0	0	0
		Father	+	--	0	0	0	0	0	0	0	0	0	0

TABLE 2 (Continued)

			1 Toward Spouse		2 Toward Child		3 Toward Self		4 Toward Others		5 Responsibility		6 Outlook	
	Treatment Period[2]:		I	II	I	II	I	II	I	II	I	II	I	II
Group	Family	Parent												
	F	Mother	+	--	++	0	0	0	0	0	--	--	++	0
		Father	+	+	+++	0	0	0	+	0	0	0	0	0
	G	Mother	++	0	0	++	0	0	0	+	0	0	0	0
		Father	+	0	0	++	0	0	0	+	0	0	0	0
	H	Mother	++	+	0	++	0	0	0	+	0	-	0	0
		Father	0	0	+	+	0	0	0	0	0	0	0	0

---

[1] Meaning of cell entries with respect to amount and direction of change:

Amount of Change	Direction of Change: Negative	Mixed	Positive
Minimum	-	$\underset{-}{+}$	+
Moderate	--	$\underset{--}{++}$	++
Marked	---	$\underset{---}{+++}$	+++

Zero change = 0

[2] Changes from Measurement Period I to Measurement Period II are listed under Treatment Period I; changes from Measurement Period I to Measurement Period III are listed under Treatment Period II.

TABLE 3

PERSONALITY CHARACTERISTIC CHANGES[1]

			1 Affect		2 Anxiety & Guilt		3 Hostility & Aggression		4 Needs		5 Ideational Activity		6 Defenses & Pathology	
	Treatment Period[2]:		I	II	I	II	I	II	I	II	I	II	I	II
Group	Family	Parent												
A	A	Mother	0	±	0	--	0	-	0	0	0	0	0	0
		Father	±	--	0	0	0	0	+++	0	++	+	0	0
	C	Mother	++	0	0	++	--	0	+	++	++	0	---	+++
		Father	0	0	0	++	0	-	0	+++	0	0	-	+
	E	Mother	0	+	0	0	++	0	0	+++	0	++	0	+++
		Father	0	0	0	0	0	--	+	0	0	0	0	++
B	B	Mother	0	+	0	0	0	0	0	0	0	+	0	0
		Father	0	0	0	0	0	0	0	+++	0	0	0	++
	D	Mother	0	-	0	0	0	0	+	+	--	++	--	--
		Father	0	+	0	0	0	0	0	0	0	0	++	-
	I	Mother	0	0	---	-	0	--	0	0	0	0	--	++
		Father	+	-	0	0	0	0	0	0	0	0	0	+

TABLE 3 (Continued)

			1 Affect		2 Anxiety & Guilt		3 Hostility & Aggression		4 Needs		5 Ideational Activity		6 Defenses & Pathology	
	Treatment Period[2]:		I	II	I	II	I	II	I	II	I	II	I	II
Group	Family	Parent												
C	F	Mother	0	0	0	0	0	0	++	+++	0	0	0	-
		Father	+	+	0	0	0	0	+	+++	0	-	0	0
	G	Mother	0	0	0	0	0	0	0	++	0	0	0	+
		Father	0	0	0	+	0	+	+	-	0	0	0	+
	H	Mother	0	0	0	++	0	++	0	+++	0	++	-	++
		Father	0	0	0	0	0	0	0	0	0	0	-	+

---

[1] Meaning of cell entries with respect to amount and direction of change:

Direction of Change

Amount of Change	Negative	Mixed	Positive
Minimum	-	$\overset{+}{-}$	+
Moderate	--	$\overset{++}{--}$	++
Marked	---	$\overset{+++}{---}$	+++

Zero change = 0

[2] Changes from Measurement Period I to Measurement Period II are listed under Treatment Period I; changes from Measurement Period III are listed under Treatment Period II.

Treatment I had no other significant effect on the mother, but the father showed improved attitudes toward the child, stressing more the relationship between himself and the child rather than his former expectations of him. (++). Father also showed a change in affect in the direction of greater control (+) by withdrawal and avoidance (-). There was also an increased need to see a change in himself and to discuss his emotional problems (++), and an increase in organizational ability and greater control over thought processes (++).

After Treatment II, mother again expressed dissatisfaction in the caring relationship, with probable expectations beyond reasonable expectations (-). Father also experienced increasing dissatisfaction in the caring relationship. He had more unrealistic expectations of her, assuming an "underdog" role to please her (--).

Mother, after Treatment II, also showed greater interest in other people (+), more optimism (++), and more control of affective reactions. The price for the increased control was an increase in avoidance and withdrawal (-). There were also an increase in anxiety about herself and her lack of control (--), and considerably more covert hostility (-). Physical symptoms and inappropriate rigidity became a new defense (--).

Father, after Treatment II, became more cheerful (+), showed an increased capacity for uncontrolled affective reactions (--) and a further increase in associative flexibility (+).

Family C - parent #1 (mother) and parent #2 (father). After Treatment I, mother showed greater satisfaction in the caring relationship with her husband. She had more realistic expectations, greater respect, and more love for him himself rather than her former manipulativeness (++). Father was more respectful of his wife rather than manipulative in the relationship (+).

Mother also showed more energy, an increased level of activity and less repression (++). Hostility which was previously open became internalized with an increase in self-blame and self-hostility (--). There was an increased expression of need for parental wisdon (+); greater use of cognitive resources (++) and considerable depression with suicidal ideation, even though projection was no longer a defense (---).

After Treatment I, father showed more hostility toward the child when he would not listen (--), and a new defense, depression (-).

After Treatment II, mother showed additional improvement in attitude toward her husband, treating him more on an equal footing (+), while father showed considerable dissatisfaction in the caring relationship with many more unrealistic expectations and greater concern for pleasing his wife by assuming an "underdog" role. Treatment of his wife was also more manipulative (---).

Mother after Treatment II showed increased concern regarding her previous angry attitude toward the child (++). No judgmental attitudes toward others were revealed (+). Her outlook improved markedly, with movement from pessimism to optimism and cheerfulness, and a more practical outlook (+++). She showed less anxiety concerning being "trapped" and also less tension (++). She no longer expressed a need to escape from the family situation, and the aggressive need was more under control (++). There was more optimism and improved reality orientation; however, physical symptoms were now part of the defense system (++).

After Treatment II, father reported less guilt, and anxiety concerning cripples was no longer present (++). Hostility which was open became more covert (-). There was a marked increase in the need for guidelines and for reinforcement therapy (+++). There was also an increased ability to conceal pathological thinking (+).

Family E - parent #11 (mother) and parent #12 (father). After Treatment I, father felt more desire to be more giving to his wife (+); there was no change in mother's attitude toward her husband. There were no other changes in father except that no indication of self-hostility was reported (++); the only change in mother was that the need for aggression dropped out (+).

After Treatment II, mother showed much more acceptance of her husband, with greater understanding and a need for a stronger relationship (+++), while father manifested greater affection and romantic interest where this had been considerably lacking in the first testing (++).

Other changes in mother, after Treatment II, were: a change in attitude toward the child, including the replacement of guilt and depression toward the child with a need to be possessive, a desire to see the child live a normal life, and a need to establish a good relationship with the child (+++). She was more optimistic in outlook (++); showed greater self-control (+); manifested no further need to resist change and expressed a desire for someone with whom to discuss problems (+). There was also an increase in use of intellectual resources and greater organizational interest and ability (++). Depression and rationalization were eliminated as defenses, and there was greater reality orientation with less evidence of ego dysfunction (+++).

Father, after Treatment II, expressed more sadness about the child's handicap (+). He was much more relaxed with accepting responsibility (++). However, more hostility was now directed toward his dislike for "helping the helpless" (--). The "martyr" defense was eliminated (++).

Changes in Group B. Families B, D, and I in Group B received non-operant counseling in Treatment I and operant counseling in Treatment II.

Family B - parent #15 (mother) and parent #16 (father). After Treatment I, mother expressed greater dissatisfaction in the caring relationship, which was extremely high and unrealistic to begin with. There was an increased tendency to please her husband by acting the "underdog" in the relationship and being less demanding (--). There was no change in father's attitude toward his wife. The only other change in mother was a change in attitude toward others in the direction of eliminating judgmental content (+). Father showed no change at all after Treatment I.

After Treatment II, mother's dissatisfaction in the caring relationship was considerably less marked even though it was greater than would normally be expected. There was less of the "underdog" attitude (+). Father's dissatisfaction in the caring relationship dropped to what would be expected in normal marriage; he was less demanding and less hostile (++).

Other changes in mother after Treatment II included an increased ability to verbalize pride in her child's work, and an increase in guilt about not being able to be with the child or give as much attention as desired (+++). There was less ambivalence regarding acceptance of responsibility (+), and greater awareness of emotions and an attempt to control and handle them (+).

After Treatment II, father had changed in his attitude toward others by eliminating judgmental content (+), but was more hesitant and less willing to accept problems of responsibility (--). He no longer verbalized a need for aggression and escape from marriage. He verbalized a need for advice (+++). There was less evidence of denial and defensiveness (++).

Family D - parents #9 (mother) and #10 (father). After Treatment I, Mother was more manipulative and demanding of her husband (-) while father expressed better feelings toward his wife and his family in general. There was less dissatisfaction on his part in the caring relationship, although his attitude was more demanding (++). There were no other changes in the father except that he showed no evidence of denial and there was greater reality orientation (++). Mother showed an improved attitude toward her child, moving from an attitude of not wanting children at all to feeling guilt and anxiety regarding interactions with the child (+). Mother also verbalized more need to be in control of herself (+), but there was also a greater expression of depression (-).

After Treatment II, mother showed greater acceptance of her husband (+), but father returned to his dissatisfaction and his need to be free of the marriage. His demanding attitude was slightly reduced (--). Other changes in mother included an improvement in her attitude toward the child, manifested by the absence of verbalization concerning guilt and anxiety and the desire to reject the child (++). In the realm of affect, mother showed better controls, but also evidence that she was turning her emotion inward and "bottling them up" (-). She showed greater interest in herself (+), and some somatic complaints (--).

Father, after Treatment II, had developed feelings of having too much responsibility (--). Nevertheless, he was more cheerful and optimistic (+), and reported an increase in energy. Reality testing was diminished (-).

Family I - parents #3 (mother) and #4 (father). After Treatment I both parents showed an improvement in attitude toward each other. Mother was more expecting of her husband (+) and father was taking less of an "underdog" attitude and being less manipulative and demanding (+). There was no other change in father except that his affect was more under control (+). Mother showed much less hostile verbalization toward the child (+), but the testing revealed repression of her own anxious feelings and there was verbalization of many anxieties concerning pressure on her husband (---). There was also increased denial and avoidance of confrontation (--).

After Treatment II, mother showed no further change in attitude toward her husband, but her husband had returned to an attitude of trying to please his wife by acting the "underdog." There was greater verbalization of aggressive feelings toward his wife (--). Other changes in father included decreasing control of affect (-) and better reality ties in some instances (+). Changes in mother after Treatment II included greater feelings of personal security (+); additional anxieties concerning her child and general feelings of rejection (-); hostility repressed and turned inward on self (--); and less disturbed fantasy, with more logical thinking (++).

Changes in Group C

Families C, G, and H in Group C received operant counseling in Treatment I and minimum contact in Treatment II.

Family F - parents #5 (mother) and #6 (father). After Treatment I mother showed a substantial lessening in dissatisfaction in the caring relationship and more realistic expectations of her husband (+). Father was less manipulative and demanding (+). Mother demonstrated more empathy with her child, with some feelings of guilt regarding her treatment of the child, and greater anxiety concerning the child (++). She was more resentful at being told what to do (--), but was verbally more optimistic (++). She demonstrated an increased need to discuss her problems (++). Father showed marked improvement in his attitude toward the child. There were no hostile wishes toward the child, and more concern for the child's welfare (+++). He showed greater interest in, and respect for, opinions of others (+), greater control of affect by reducing activity (+), and his need for aggression was not verbalized (+).

After Treatment II mother manifested increased dissatisfaction in the caring relationship beyond what had been originally displayed. There was more need to please her spouse by acting the "underdog" (--). At the same time, father was demonstrating greater respect for his wife (+). Other changes in mother included: intense resentment at accepting responsibility which was a reversal of her original attitude (--); improved outlook (++); a markedly stronger need to straighten out her thinking and to help herself (+++); and less verbalization of denial, but some suicidal ideation was evident (-).

Changes in father after Treatment II included: more appropriate control over his affect, though he was still excitable (+); a marked need for advice and help with problems (+++); and more defensiveness and less ability to use ideation (-).

Family G - parents #13 (mother) and #14 (father). After Treatment I mother's attitude toward her husband had improved with less dissatisfaction and verbalization of a more positive attitude toward her husband and their marriage (++). Father had greater respect for his spouse (+). There were no other changes in mother. The only other change in father was that there was no further verbalization of the need to escape.

After Treatment II there was no further change in mother or father's attitude twoard each other. Further changes in mother included: no longer any verbalization of lack of understanding of the child's needs (++); no verbalization of judgmental content (+); less defensiveness (-). Other changes in father after Treatment II included: less moralistic concerning others (+); better able to tolerate anxiety (+); less hostility shown toward females (+); better reality orientation (+); and increased use of avoidance (-).

Family H - parents #17 (mother) and #18 (father). After Treatment I, father showed no change except for a report of greater interest in the child (-) and greater passivity (-). Mother showed greater interest in her husband and verbalization of greater happiness with the marriage (-). Physical symptoms also became evident (-).

After Treatment II, Father's verbalizations of a negative nature concerning the child were no longer in evidence (+), and there was a reduction in passivity (+). Mother, after Treatment II, showed greater respect for her husband (+). She also reported being more protective of, and concerned with, the child (++). She was feeling more comfortable in groups (+); complained of too much responsibility (-); was less threatened by feelings of rejection and guilt (++); had greater ability to cope with aggression (++); her needs were now concerned more with the family and their happiness than with herself (+++); a greater ability to use inner resources (++); and no evidence of physical symptoms and increased reality orientation (++).[2]

In order to determine the changes attributable to each of the three Treatment programs, the classification of each degree of changes was given a numerical value. Changes rated minimum were assigned one point, moderate changes were given two points, and marked changes were assigned three points. Table 4 shows the net changes in this numerical fashion.

Place Table 4 here

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[2] This is the end of the reorganization of Dr. Hill's sections on Changes in Groups A, B, and C.

TABLE 4

NET CHANGES PER GROUP FOR ALL VARIABLES

ttitude riables	Group A			Group B			Group C		
	I	II	Sum	I	II	Sum	I	II	Sum
- Spouse	+7	0	+7	+1	0	+1	+7	0	+7
- Child	0	+8	+8	+3	+5	+8	+6	+7	+13
- Self	0	0	0	0	+1	+1	0	0	0
- Others	0	+2	+2	+1	+1	+2	+1	+3	+4
- Responsibility	0	+2	+2	0	-3	-3	-2	-3	-5
- Outlook	0	+8	+8	0	+1	+1	+2	0	+2
s of Atti- e Changes	+7	+20	+27	+5	+5	+10	+14	+7	+21

TABLE 4 (Continued)

Personality Attributes	Group A			Group B			Group C		
	I	II	Sum	I	II	Sum	I	II	Sum
1 - Affect	+2	-1	+1	+1	0	+1	+1	+1	+2
2 - Anxiety & Guilt	0	+2	+2	-3	-1	-4	0	+3	+3
3 - Hostility & Aggression	0	-4	-4	0	-2	-2	0	+3	+3
4 - Needs	+5	+8	+13	+1	+4	+5	+4	+10	+14
5 - Ideational Activity	+4	+3	+7	-2	+3	+1	0	+1	+1
6 - Defenses & Pathology	-4	+10	+6	-2	+2	0	-2	+4	+2
Sum of Personality Changes	+7	+18	+25	-5	+6	+1	+3	+22	+25
Sum of Attitude Changes	+7	+20	+27	+5	+5	+10	+14	+7	+21
Sum of both types of changes	+14	+38	+52	0	+11	+11	+17	+29	+46

Attitudinal Changes

1. Toward spouse. Both Groups A and C show plus 7 points of change. Group B shows plus 1 point of change. Since both Groups A and C were given Operant Treatment and Minimum Contact Treatment, it appears that this combination resulted in more positive changes in attitude toward the spouse. Although Group B received Operant Treatment, the prior Non-operant Treatment appears to have created interference in the utilization of the Operant Treatment technique as compared with the other groups.

2. Toward the child. Group C has a total of plus 13 points of change. Groups A and B both have plus 8 points of change. The earlier exposure of Group C in Treatment I to the operant principles appears to have provided an advantage in creating greater change for this group in the attitude toward the child.

3. Toward the self. With the exception of one parent in Group B, who showed a plus 1 point change, there was no change for any other parent. It is not surprising to find this result. The self-concept is at the core of the personality. A measurable change in self-concept would represent basic changes in the individual. Although many changes in behavior are reflected in the psychological tests in this study, the relatively short time of the involvement would preclude significant basic changes in self-concept.

4. Toward others. Groups A and B have plus 2 changes. Group C has a plus 4 change which reinforces the trend toward superiority of the treatment schedule which they received in effecting changes in attitude.

5. Toward responsibility. Group A had a plus 2 point change involving one male parent. Group B had a minus 3 point change involving two male parents. (A plus 1 point change for one female parent reduced the final score from minus 4 to minus 3.) Group C had a minus 5 point change involving two female parents. It may be speculated regarding the Group C results that the operant treatment, being the first treatment, may have increased the responsibility over a longer period of time for the mother. This may have created a resultant aversion not found in the mothers of Groups A or B.

6. Outlook. Group A had a plus 9 change, and Group C had a plus 2 change. Members in Group A reported much more optimism and cheerfulness after Treatment II, the operant phase, than did any of the others. The recency of this treatment to the final testing may be accountable for this result.

Personality Characteristics Changes

1. Affect. Both Groups A and B show a plus 1 change. Group C showed a plus 2 change. In both Groups A and B there were many changes in affect involving many members of the groups. The plus and minus changes cancelled each other out to a result in a total plus 1 change for each. The change in affect for Group C affected one member only, who

showed two minimum positive changes, one after each treatment period. Operant conditioning can be said not to be concerned with affect and feelings but more with behavioral changes. Thus it would be expected that change in affect during operant processes would be held to a minimum.

2. Anxiety and guilt. Group A had a plus 2 change and Group C had a plus 3 change. Group B had a minus 4 change. The negative changes in Group B were all experienced by one individual who showed a marked negative change in anxiety after Treatment I,which was the non-operant treatment where feelings were discussed; and a further minimum negative change after Treatment II. The nature of the operant process apparently led to a reduction in anxiety and guilt.

3. Hostility and aggression. Both Groups A and B had negative changes in hostility and aggression, Group A with a minus 5 change, Group B with a minus 2 change. It is interesting to note that the minus 2 change in Group B involves the same person who experienced the minus 4 change in anxiety and guilt. In Group C there were plus 3 points of change, with no minus changes experienced by any of the parents.

4. Needs. Verbalization of realistic needs changed in a positive direction for both Groups A and C. Group A showed plus 13 points of change and Group C showed plus 14 points of change. Group B showed plus 5 points of change. Both Groups A and C, who had only operant conditioning, were able subsequently to assess their needs more realistically and reach out for assistance in determining modes of coping with the family situation.

5. Ideational activity. Group A showed the greatest positive gain with plus 7 points of change. Both Groups B and C showed a plus 1 change each. Group A was better able to mboilize inner resources and ideational activity than were the other two. Again, the recency of the operant process without having exposed to any other type of treatment program, appears to have given this group an advantage.

6. Defenses and pathology. Both Groups A and C showed a plus 2 points change. Group B showed no net change. In all groups there were considerable changes with five out of six individuals in each group showing some changes, either positive or negative, in defenses and pathology during the period of the study. The changes in Group B, both positive and negative, cancel themselves out so that there was no final net change. Changes in Groups A and C showed a slight positive gain. There is not sufficient gain to warrant any statement concerning this variable.

Conclusions

Group A showed the highest total changes with plus 49 points of change. Group C was the second highest with plus 46 points of change. Group B had plus 11 points of change. These results demonstrate that the most positive changes in the parents' test performances were in those groups where the use of operant techniques and minimum contact were the only forms of treatment.

Conclusions and Recommendations

Conclusions

It is appropriate to determine the status of our purposes. Which purposes did we fulfill? What is left to do?

It is no secret that this work was done by partisan investigators; therefore, we have attempted to insure the objectivity and the reliability of the data and to keep the data free from contamination.

The original purposes of this research were to (1) develop, (2) describe, (3) evaluate, (4) improve, and (5) disseminate an educational program for teaching child-care students (especially parents of disturbing children) principles and applications of behavioral analysis. On the basis of our experience and findings we present our conclusions relevant to the above five purposes.

1. To develop the program. The educational program has been developed over several years. It seems to have gained in objectivity of its procedures and in efficiency of its therapeutic outcome. It is not close to being a totally finished product. Its development has been aided within the behavioral analysis tradition. We believe that it will improve further within this same tradition.

2. To describe the program. An initial major goal was that this type of program be so well described that it could be tried and improved by others. This report presents a detailed procedural, albeit nonquantitative, description of how to do it; in that sense the method has been described. The report also presents a system for describing the therapeutic process in more quantitative terms.

3. To evaluate the program. The comparative study of three different methods ("wait," nonoperant, and operant) which was conducted especially to serve the above purpose to describe the program also provided objective means to evaluate its outcome. The number of subject families was a little too small for statistical comfort although it was a little too large for clinical comfort.

The outcome measures of this study are quite positive. The parents of all groups, after being given operant counseling, were able to help their children behave better (better being defined not only in general terms but also in terms specific to the interests of each pair of parents). The parents of the groups given only operant counseling showed much more improvement on the psychological test performances than did the parents who were given non-operant and then operant counseling.

4. To improve the program. On the basis of changes in the program so far, one can surely expect more development and improvement in this behavioral approach to family therapy. Several major problems remain to be solved; they shall be mentioned below.

5. To disseminate the program. This report is just one type of attempt to make this type of program more generally available. Several manuscripts are being submitted at this time for publication of parts of this report in technical, professional journals. This purpose will not be served adequately until we reach the ordinary person who has the extraordinary responsibility for the behavioral development of members of the next generation in the evolution of homo sapiens.

Recommendations

In order to build upon and benefit from this work several next steps and applications are recommended.

1. The process and outcome data from this study are not completely analyzed and presented. This work should be completed.

2. These subjects should be followed to supply hard, objective data about the durability of the output of this method.

3. This method, while effective over a short time, takes lots of staff time. Adaptations of this method designed to make it more efficient should be sought.

4. In order to repeat this type of study to get more data on which to perform more adequate statistical tests a comprehensive training program should be developed for operant family consultants. Appropriate textbook and other materials should also be developed.

5. In order to better communicate the results to fellow professionals and to others, this work should be described for more specialized audiences (e.g., psychologists, educators, parents, psychiatrists, etc.).

6. Programs which teach behavioral analysis to students in secondary and elementary schools should be developed and tried out. This will allow us to reach people before they become parents. In this way the program can be preventative.

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Letter sent to A group before
Treatment I (Minimal contact I).

October 9, 1967

Dear (Group A family: A, C, and E):

We have devised a program which is designed to fit your particular situation (the way you and your child interact). We believe that your child's behavior and your handling of it deserve a period of careful observation followed by a period of more active intervention by us. Therefore, we would like to present the following calendar to you.

For the period starting October 16, 1967 and ending January 3, 1968 we shall relate to you in two ways. First we shall receive from you weekly reports of your observations at home; second, we shall visit you occasionally with the video tape recorder. The observation forms are enclosed.

We want you to come to our offices in the Counseling Center from 7:30 PM to 10:00 PM on each of the following Wednesdays:

January 31, 1968
February 7, 14, 21, 28
March 6, 13, 20, 27
April 3, 10, 17

Home observers will make observations in your home during the days of January 4 until January 29 and April 18 until May 6.

The three checks which you deposited with us will be placed in a safe deposit box. There are 5 major ways in which you may tell us to send these checks to the specified charities.

1. If both parents do not appear for any of the above scheduled meetings a check will be sent to the charity.

2. A second way to send checks to a charity is by appearing at one of our meetings without having fulfilled the week's assignment. (On such occasions you will not be admitted to the meeting until the assignment is completed.

3. A third way to have a check sent is by not being able to make satisfactory arrangements for our home observers to record video tapes in your homes during the specified observation periods.

   January 4, 1968 - January 29, 1968
   April 22, 1968 - May 6, 1968

4. A fourth way to have some money sent to a charity is by arriving late to any of our scheduled meetings. For every minute late, you will be charged 10% of the check value for

that week. Thus, being 10 minutes late to any meeting, resulrs in our sending the entire check to the specified charity.

5. The fifth way to send a check to a charity is by failing to mail to us your weekly report of home observations between October 18 and January 31.

We will require you to deposit with us three checks of a specified amount. Check #1 is to be made payable to a desirable charity. Check #2 is to be made payable to a neutral charity, and check #3 is to be made payable to an undesirable charity. If it becomes necessary to send check #1, you will give to us a fourth check payable to the undesirable charity. If for any reason, it becomes necessary to send Check #2, you will give to us a fifth check payable to the undesirable charity. All checks sent after the second will be payable to the undesirable charity.

If there are any questions regarding these procedures, do not hesitate to call Mrs. Sechrist, at 454-2931.

Sincerely yours,

Leopold O. Walder
Parent Project

Letter sent to B group before
Treatment I (Non-operant I).

October 9, 1967

Dear (Group B family: B, D and I):

We have now devised a program designed to fit your particular situation (the way you and your child interact). We feel it would be best for you to participate with us during our Monday evening meetings. These meetings will require the presence of both of you at the Counseling Center on Monday nights from 7:30 P.M. to 10:00 P.M. The specific evenings involved are:

October 16, 23, 30
November 6, 13, 20, 27
December 4, 11, 18, 26 (Tue.)
January 2 (Tue.), 29
February 5, 12, 19, 26
March 4, 11, 18, 25
April 1, 8, 15

Home observers will make observations in your home during the period from January 4, through January 29 and from April 18 through May 6.

The three checks which you deposit with us will be placed in a safe deposit box. There are two major ways in which you may tell us to send these checks to the specified charities.

1. If both parents do not appear for any of the above scheduled meetings a check will be sent to the charity.

2. A second way to have a check sent is by not being able to make satisfactory arrangements for our home observers to record video tapes in your homes during the specified observation periods.

January 4, 1968 - January 29, 1968
April 18, 1968 - May 6, 1968

We will require you to deposit with us three checks of a specified amount. Check #1 is to be made payable to a desirable charity, check No. 2 is to be made payable to a neutral charity, and check No. 3 is to be made payable to an undesirable charity. If it becomes necessary to send check #1, you will give to us a fourth check payable to the undesirable charity. If for any reason it becomes necessary to send Check #2, you will give to us a fifth check payable to the undesirable charity. All checks sent after the second will be payable to the undesirable charity.

If there are any questions, regarding these procedures, do not hesitate to call Mrs. Sechrist at 454-2931.

Sincerely yours,

Letter sent to C group before Treatment I (Operant I). October 9, 1967

Dear (Group C family: F, G and H):

We have now devised a program designed to fit your particular situation (the way you and your child interact). We feel it would be best for you to participate with us during our Wednesday evening meetings. These meetings will require the presence of both of you at the Counseling Center on Wednesday nights from 7:30 P.M. to 10:00 P.M. The specific evenings involved are:

Wednesday, October 18, 25
November 1, 8, 15, 22, 29
December 6, 13, 20, 27
January 3

Home observers will make observation in hour home during the days of January 4 until January 29 and April 18 until May 6.

The three checks which you deposit with us will be placed in a safe deposit box. There are four major ways in which you may tell us to send these checks to the specified charities.

1. If both parents do not appear for any of the above scheduled meetings, a check will be sent to the charity.

2. A second way to send checks to a charity is by appearing at one of our meetings without having fulfilled the week's assignment. (On such occasions you will not be admitted to the meeting until the assignment is completed).

3. A third way to have a check sent is by not being able to make satisfactory arrangements for our home observers to record video tapes in your homes during the specified observation periods.

   January 4, 1968 - January 29, 1968
   April 18, 1968 - May 6, 1968

4. A fourth way to have some money sent to a charity is by arriving late to any of our scheduled meetings. For every minute late, you will be charged 10% of the check value for that week. Thus, being 10 minutes late to any meeting, results in our sending the entire check to the specified charity.

We will require you to deposit with us three checks of a specified amount. Check #1 is to be made payable to a desirable charity. Check #2 is to be made payable to a neutral charity, and check #3 is to be made payable to an undesirable charity. If it becomes necessary to send Check #1, you will give to us a fourth check payable to the undesirable charity. If for any reason, it becomes necessary to send

Check #2, you will give to us a fifth check payable to the undesirable charity. All checks sent after the second will be payable to the undesirable charity.

If there are any questions regarding these procedures, do not hesitate to call Mrs. Sechrist, at 454-2931.

Sincerely yours,

Leopold O. Walder
Parent Project

RELEASE OF INFORMATION FOR
SCIENTIFIC PUBLICATION
FOR
PARENT PROJECT OF
INSTITUTE FOR BEHAVIORAL RESEARCH

I, ____________________ (name), ________________ (relationship)

and I, ____________________ (name), ________________ (relationship)

of ____________________ (child's name) give to the Parent Project of the Institute for Behavioral Research (which is conducted at the University Counseling Center, University of Maryland) permission to use information (including video and audio recordings) concerning us and our child for scientific publication. The Project staff promises to protect our identity and reputation by the use of pseudonyms.

DATE ____________________

____________________ (Signature)

____________________ (Signature)

____________________ (Witness)

Letter sent at end of Treatment
Period I (Minimal contact) to
A group families.

January 6, 1968

Dear_________________________:

As planned, the treatment program for you changes at this time. I have listed (in no special order) some of the dates and duties.

1. Please continue recording and sending in the hourly reports for each and every day.

2. We shall be contacting you about coming to your home to make three video tapes in the period starting January 8 and ending January 28, 1968.

3. We have already made an appointment with you to come with your son to our offices from 4:00 to 6:00 P.M. on Sunday, January 28, 1968.

4. We shall be contacting you to come to our offices for a couple of hours to fill out some forms and to talk to us.

5. We expect you to come to our offices for Wednesday evening sessions (7:30-10:00 P.M.) on the following dates: January 31, February 7, 14, 21, 28, March 6, 13, 20, 27, April 3, 10, 17.

6. During the period from April 22 through May 12, 1968 we shall be repeating steps numbers 1 through 4.

7. We plan to return your checks to you on Sunday, May 12, 1968, when our project will terminate. Let me review at this time ways in which you may tell us to send a check to the organization you have specified:

a. If both parents do not appear (on time) for any of the above scheduled meetings.

b. If you fail to complete your assignment(s).

c. If you do not make satisfactory arrangements for our home observers to record video tapes in your home during the observation periods from January 8 through January 28 and from April 22 through May 12, 1968.

If a check is to be sent, you will be notified and asked to replace it with another check. This is as specified in my letter of October 9, 1967.

If you have any questions or suggestions, we would like to hear from you. Do not hesitate to call Mrs. Sechrist at 454-2931.

Sincerely,

Leopold O. Walder
Director
Parent Project

Letter sent at end of Treatment
Period I (Non-Operant I) to
B group families.

January 6, 1968

Dear ______________________________:

As planned, the treatment program for you changes at this time. I have listed (in no special order) some of the dates and duties.

1. Please continue recording and sending in the hourly reports for each and every day.

2. We shall be contacting you about coming to your home to make three video tapes in the period starting January 8 and ending January 28, 1968.

3. We have already made an appointment with you to come with your son to our offices from 8:00 to 10:00 A.M. on Saturday, January 27, 1968.

4. We shall be contacting you to come to our offices for a couple of hours to fill out some forms and to talk to us.

5. We expect you to come to our offices for more Monday evening sessions (7:30-10:00 P.M.) on the following dates: January 29, February 5, 12, 19, 26, March 4, 11, 18, 25, April 1, 8, 15.

6. During the period from April 22 through May 12, 1968, we shall be repeating steps numbers 1 through 4.

7. We plan to return your checks to you on Sunday, May 12, 1968, when our project will terminate. Let me review at this time ways in which you may tell us to send a check to the organization you have specified:

a. If both parents do not appear (on time) for any of the above scheduled meetings.

b. If you fail to complete your assignment(s). (I might say that due to possible errors on our part the assignment of No. 1 above may have been temporarily stopped. You should not have to pay for our error.)

c. If you do not make satisfactory arrangements for our home observers to record video tapes in your home during the observation periods from January 8 through January 28, and from April 22 through May 12, 1968.

If a check is to be sent, you will be notified and asked to replace it with another check. This is as specified in my letter of October 9, 1967.

If you have any questions or suggestions, we would like to hear from you. Do not hesitate to call Mrs. Sechrist at 454-2931.

Sincerely,

Leopold O. Walder
Director
Parent Project

Letter sent at end of Treatment
Period I (Operant I) to C group
families.

January 6, 1968

Dear__________________________:

As planned, the treatment program for you changes at this time. I have listed (in no special order) some of the dates and duties.

1. Please continue recording and sending in the hourly reports for each and every day.

2. We shall be contacting you about coming to your home to make three video tapes in the period starting January 8 and ending January 28, 1968.

As part of our follow-up, we shall also arrange to go to your home to make one video tape in each three week period from January 29 through April 21, 1968.

3. We have already made an appointment with you to come with your daughter to our offices from 12:00 to 2:00 P.M. on Sunday, January 28, 1968.

4. We shall be contacting you to come to our offices for a couple of hours to fill out some forms and to talk to us.

5. If you want our consultation, please telephone our offices (454-2931) and we'll be glad to extend to you whatever help we can. We would hope you have read Part 2 of Holland and Skinner's The Analysis of Behavior. Also, please have a plan that you want us to help you with. The plan will probably work better if it conforms with Table 3 of Reese's The Analysis of Human Operant Behavior. You will then be contacted by one of our consultants as soon as possible.

6. During the period from April 22 through May 12, 1968, we shall be repeating steps numbers 1 through 4.

7. We plan to return your checks to you on Sunday, May 12, 1968, when our project will terminate. Let me review at this time ways in which you may tell us to send a check to the organization you have specified:

a., If both parents do not appear (on time) for any of the above scheduled meetings.

b. If you fail to complete your assignment(s). (I might say that due to possible errors on our part the assignment of No. 1 above may have been temporarily stopped. You should not have to pay for our errors.)

c. If you do not make satisfactory arrangements for our home observers to record video tapes in your home during the observation periods from January 8 through January 28 and from April 22, through May 12, 1968.

If a check is to be sent, you will be notified and asked to replace it with another check. This is as specified in my letter of October 9, 1967.

If you have any questions or suggestions, we would like to hear from you. Do not hesitate to call Mrs. Sechrist at 454-2931.

Sincerely,

Leopold O. Walder
Director
Parent Project

Letter to all 9 families at end of
Treatment Period III.

April 10, 1968

Dear ________________________:

We should like to try to clarify our future relationship. We shall offer you consultation if you will contact us by mail, telephone or in person, providing you present evidence of having formulated the questions in terms of present levels of behavior, behavioral goals, and suggested plans. Until May 26, 1968, videotaping in the home and home observations will continue.

Measurement 3 Period begins Monday, April 29, 1968 and ends on Sunday, May 26, 1968. We expect to do more videotaping in the home and in the office and psychological testing in our office. We shall contact you shortly about specific times for the testing. Please continue home observations through the weeks of Measurement 3 Period. During Measurement 3 Period consultation will be temporarily suspended.

After Measurement 3 Period we shall have a picnic for all the families who have participated in the project. We hope you (your whole family) can come to my home (map attached) on May 26. At that time your checks will be returned and we shall be happy to discuss with you any aspects of our program. Our errors and non-errors will be told to you as we see them, and we hope to hear from you about our program as you see it. We'd like to hear what you think happened. We'd like to hear what recommendations you have for future programs.

We shall be an organization until August 31, 1968 and stand ready as an organization to serve you until that date.

Sincerely,

Leopold O. Walder
Director, Parent Project

LOW/nfw
Enclosure

Certificate sent after Measurement
Period III to all nine families.

June 10, 1968

This letter certifies that Mr. & Mrs. ________________ studied, under our direction, the theory and application of operant analysis for the solution of behavioral problems. They are, therefore, certified parents who are qualified to control behavior by positive means. The recipients of their services are expected to emit behaviors which will be useful and productive in influencing other people.

Leopold O. Walder, Ph.D.
Director, Parent Project

Behavioral Vignette (Operant I Treatment)
Open-ended type

Name ______________________

Date ______________________

Vignette 14

Mr. and Mrs. Smith were complaining (to a doctor) that they were having difficulty in getting Billy to eat at mealtimes. This is how the mother explained the situation:

"We sit down to dinner (Billy, his mother, and father). I prepare Billy's plate for him; then we all begin eating. Since Mr. Smith and I are both busy through the day, the only real chance we have to talk to each other is over dinner. Billy seems to like to hear us talk and tries on occasion to join us. But he really doesn't understand much of what his daddy and I are saying, and sometimes what he says just doesn't make sense.

"That's the way things were up till a couple of months ago. Then we noticed Billy slowly beginning to lose his appetite or at least he stopped eating much at dinner unless we told him he couldn't leave the table. Now it takes just about twice as long to eat his meals.

"Mr. Smith and I will be talking as we usually do. Then one of us will notice that Billy has stopped eating. So we have to stop what we're talking about and tell him to eat his peas or drink his milk. He generally begins eating right away, and we keep our eye on him for a while to make sure he keeps it up. Eventually, his daddy and I get back to our meal and conversation. But the next thing you know, he's stopped eating again, and we have to do the same thing over. I'm just at a loss for what to do."

1. Why do you think Billy is eating less, or at least taking longer to eat than before?

2. What would you tell Mr. and Mrs. Smith to do to improve Billy's eating habits and still make mealtime a comfortable situation for the whole family?

Behavioral Vignette (Operant II Treatment)
Type 1: Closely related to content in Holland and Skinner (1961).

Name ______________________________

Date ______________________________

Vignette 1

A child drops a plate and it breaks with a loud noise. The child's mother jumps, cringes, and turns to look.

1. The noise from the breaking plate is a __________________________
2. The plate and the hard floor are s__________ o__________.
3. The mother's jumping and cringing is the startle ____________.
4. The loud noise and the cringing together are called a r________.
5. The loud noise e______________ the startle response.
6. The startle reflex is made up of the ____________ (stimulus) and ______________ (response).

Answers

a. stimulus

b. stimulus object

c. response

d. reflex

e. elicits

f. loud noise, jumping and cringing

Behavioral Vignette (Operant II Treatment)
Type 2: Related to a therapeutic technique

Name ________________________

Date ________________________

Vignette 3

Johnny was once badly bitten by a dog and ever since, he has been "afraid of" dogs. That is, whenever he sees a dog he cries.

1. The unconditioned stimulus was the b__________.

2. The conditioned stimulus was the sight of the d__________.

3. The conditioned responses was c__________.

Johnny's parents were concerned about his fear of dogs and they took him to a psychologist for therapy. The psychologist repeatedly showed Johnny pictures of dogs, then showed him a dog in the next room through a one-way mirror, and finally brought in a small friendly dog.

4. The procedure of showing Johnny a dog with no adverse consequences is called e__________.

5. Describe the procedure of extinction, using the word conditioned stimulus in your description.

6. What is the effect of extinction on the strength of the conditioned response?

Answers

a. bite

b. dog

c. crying

d. extinction

e. the procedure of extinction consists of repeatedly presenting the conditioned stimulus alone.

f. The conditioned response (crying) decreases in strength as a result of extinction.

Behavioral Vignette (Operant II Treatment)
Type 3: Operant analysis of a variety of behaviors

Name ____________________

Date ____________________

Vignette 22

	C or I*	0, 1, 2**
1. A mother gives her child a token reinforcer every time the child has completed 10 arithmetic problems. The child is being reinforced on a TT ________ ________ 10 schedule.	☐	☐
Does this schedule produce a high or low response rate?	☐	☐
2. A mom gives her kid a cookie the first time he says something after one minute has passed since the last cookie. What kind of schedule is she reinforcing the child on?	☐	☐
Will the response rate after a reinforcement be high or low?	☐	☐
Before reinforcement?	☐	☐
3. An actor auditions for parts and he gets one on the average of one time out of ten. He is reinforced for auditioning on a TT ________ ________ schedule of reinforcement.	☐	☐
Would it be easy to extinguish the actors auditioning behavior?	☐	☐
4. A government bombs an enemy road. Surveillance shows that the enemy uses the road at unpredictable intervals of time. Assuming that bombing when the enemy is on the road is what reinforces bombing behaviors, what schedule is this behavior being reinforced on?	☐	☐
What kind of rate of bombing would you expect from this schedule?	☐	☐
Would bombing be easy or difficult to extinguish?	☐	☐
5. If you wanted to produce a high, steady rate of responding, which schedule would you use?	☐	☐

Vignette 22 (Continued)

	C or I*	0, 1, 2**
6. If you wanted a behavior to be easy to extinguish which schedule would you use?	☐	☐
Why?	☐	☐

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* The parent responding judges the parent who read his (her) answer aloud as Correct or Incorrect.

**1 point for correctness of parent's response
1 point for correctness of parent's judgment

Answers

a. fixed ratio - high

b. fixed interval - low rate after reinforcement
high rate before reinforcement

c. variable ratio. No.

d. variable interval - intermediate, steady rate.
Bombing would be difficult to extinguish.

e. variable ratio

f. CRF or FR1.

Behavioral Vignette (Operant II Treatment)
Type 4: Operant analysis of social interactions

Name ______________________________

Date ______________________________

Vignette 2

A father hugs his child.

1. For the father, hugging is a ____________________ .
2. For the father, the tightness of the hug is the m_________________ of the ____________.
3. For the child, the hug is a ____________________ .
4. For the child, the tightness of the hug is the l_______________ of the ______________________ .
5. The child is part of the _________________'s environment.
6. The father is part of the _________________'s environment.

Answers

a. response

b. magnitude, response

c. stimulus

d. intensity, stimulus

e. father's

f. child's

Format of Case Reports December 26, 1967

Pavey and Walder

This outline is designed to guide individual (operant and non-operant) therapists (or consultants) in writing case reports after 12 weeks of treatment. The group leader will write on those topics that seem relevant. He will write one report on the group of three families. At a later date the supervisor of the therapeutic team will, by cutting and pasting, coordinate the group and individual reports.

1. Abstract (upper limit: 300 words)
2. Basic description of family
   Demographic characteristics including living conditions
3. Child's social environment
   - a) Family dynamics and relevant history
     Personality description of family members
     Interrelations among family members
   - b) Significant others
4. Dynamics and relevant history of child's life
5. Statement(s) and/or perception(s) of problem(s) by participants in therapy (father, mother, child, therapist, other)
6. The Therapy
   - a) Goal(s) of therapy
   - b) Description of therapy (Process)
     - 1) Techniques with any available literature citations
     - 2) Statement of ideal treatment and what actually happened (what may have been done that wasn't)
   - c) Progress made (Outcome)
7. Statement(s) and/or perception(s) of problem(s) by participants in therapy (father, mother, child, therapist, other) at end of treatment period 1. Present status of child and of family and recommendations for future.
8. Appendices
   - a) Weekly interview reports
   - b) Documents from other agencies (note which ones have not been received)
   - c) Other documents

These reports shall be written with the understanding that they will form the bases for chapters in a book to be published at the end of our research. (You will be given authorship (and all corresponding rights) of the relevant chapter(s).) Please consider that we shall all be served if later revision by the editors is kept to a minimum. Also consider that we are writing for a broad readership. Our reports should be understood by both operant and non-operant therapists.

A rough draft (hand written or typed) of the case report on your Treatment Period I family is due January 15, 1968. You will be given a dated, typed copy of the rough by January 17 (or sooner). The edited draft of your report is due seven days after the date on the typed rough draft. Reinforcements in the form of paychecks are contingent on the above.

Table 5: Video Tape Ratings of all Nine Families (A through I)

Family A in Group A

	Father-child			Mother-child		
	1	2	3	1	2	3
No. questions	58	37	97	135	278	315
No. answers	0	0	6	12	4	49
No. non-understandables	6	22	33	161	73	108
No. directions	96	159	129	74	111	32
No. obey	35	51	71	49	42	22
Time inattention	31	113	0	42	91	43
Time scream	45	28	0	9	2	0

Family B in Group B

See Table 3 on page 124 for the video tape ratings of family B. They were included in the case report of family B.

Family C in Group A

	Father-Child			Mother-Child		
	1	2	3	1	2	3
No. directions	*	20	24	26	23	10
No. obey	*	11	18	15	9	4
No. negative	*	3	4	10	5	6
Time task interrupted	*	85	161	285	24	72

*Technically bad tape was unratable.

Table 5 (Continued)

Family D in Group B

	Father-child			Mother-child		
	1	2	3	1	2	3
No. directions	39	33	16	40	8	20
No. disobey	1	10	1	8	0	2
No. complaints	10	4	3	26	0	0
No. repeated requests	6	1	0	4	0	0
Time hyperactivity	76	216	813	844	289	136

Family E in Group A

	Father-child			Mother-child		
	1	2	3	1	2	3
No. speech prompts	92	169	167	84	110	62
No. answers	19	16	98	2	11	12
No. initiates	2	0	12	0	0	0
No. non-understands	79	84	70	167	79	113
Time non-understands	153	198	135	661	212	301
No. tapping	20	2	0	35	12	8
Time tapping	72	3	0	128	35	21
No. parent talks	176	206	222	209	189	110
Time parent talks	1189	418	624	990	920	883
No. directions	91	73	81	142	60	114
No. obey	58	31	0	74	37	69

Table 5 (Continued)

Family F in Group C

	Father-child			Mother-child		
	1	2	3	1	2	3
No. high speech	13	252	83	21	69	53
No. low speech	77	45	157	170	128	156
No. undesirable gestures	34	20	11	17	55	29
No. rock (sit)	41	37	36	30	67	51
Time rock (sit)	333	312	462	236	780	221
No. rock (stand)	8	1	0	19	0	15
Time rock (stand)	63	2	0	161	0	56
No. inattention	3	18	6	30	28	22
Time inattention	82	245	32	378	258	124

Family G in Group C

See Table 2 on page 39 for the video tape ratings of family G. They were included in the description of the operant I then minimal contact II sequence of treatments.

Family H in Group C

	Father-child			Mother-child		
	1	2	3	1	2	3
No. questions or directions	171	101	239	25	66	90
No. answers	115	82	174	11	31	28
No. I don't know	7	6	18	1	2	3
No. obeys	1	6	15	4	7	27
No. self-initiated	2	4	2	1	5	8
No. head-nodding	0	0	0	1	0	0
Time head-nodding	0	0	0	2	0	0

Table 5 (Continued)

Family I in Group B

	Father-child			Mother-child		
	1	2	3	1	2	3
No. questions	82	81	41	50	28	14
No. answers	0	0	0	0	0	0
No. laughs	90	40	2	84	0	0
No. other sounds	101	60	112	120	73	87
No. inappropriate use of furniture	1	3	0	42	6	1
Time inappropriate use of furniture	10	3	0	703	110	40
No. tantrums	0	1	0	36	9	13
Time tantrums	0	7	0	93	146	128
No. directions	131	108	132	128	22	20
No. obey	0	8	63	20	2	4
No. hits teeth	5	2	0	8	2	28
No. clapping	29	18	7	60	75	78
Time clapping	82	52	16	183	307	240

B12 Tuesday, Aug. 22, 1967 THE WASHINGTON POST

Abnormal Behavior of Children Altered

By Willard Clopton Jr.
Washington Post Staff Writer

At 15, Lucy was a confirmed trichotillomaniac.

The term is a medical one referring to people who have the urge to pull out their own hair.

Lucy had been yanking hers out ever since she was little, as a way of winning attention and favors from her parents. She had developed a growing bald spot and conventional psychotherapy wasn't helping.

Help did come at last from Dennis Breiter, a graduate student of psychology at the University of Maryland.

Some complex family psychodynamics were involved, but basically, Breiter's solution was to get the parents to ignore the hair-pulling.

Girl Recognizes Futility

"It was tough on them at first, not to react with all that hair coming out," Breiter said. "But the girl finally saw that her tactic had become nonfunctional and in four or five weeks she stopped. Now her hair's growing out fine."

Breiter is one of a score of researchers involved in the Parent Project, an unusual effort under way at College Park to help children with severe behavioral problems.

The team's novel premise is that a disturbed child's parents are the ones who know him best and that they can be taught effective techniques to help overcome his difficulties.

"It's quite a change from the usual approach," said Shlomo Cohen, a Ph.D. candidate who is the project's research coordinator/

"Ordinarily you might bring an expert into the situation on the theory that the parents were dumb enough to create the problem but not smart enough to solve it. Our idea is to make the parents our colleagues. We teach them certain skills and they do the work."

Area Families Eligible

Begun in March, 1966, the experimental program is being carried out by faculty and students of the University of Maryland Psychology Department. It is supported by a grant from the U.S. Office of Education and is administered by the Institute for Behavioral Research in Silver Spring.

The group's services are available to parents in this area who feel they need help in coping with serious behavior problems in their children, and who are willing to cooperate in the research. Persons interested may write to Gail Sechrist at the University's Counselling Center.

About 40 children in the Baltimore-Washington area have been reached by the program so far.

The youngsters were of all ages and displayed a wide range of bizarre behavior such as head-banging, tantrums, rocking in a chair for hours at a time and failing to demonstrate any awareness of the world around them. Many had been diagnosed in such classic clinical terms as schizophrenic, autistic and mentally deficient.

"We don't care much for those labels," said Dr. Leopold O. Walder, an associate professor of psychology who is the project's principal investigator.

"They suggest that the kids are unreachable or have poor prognosis for improvement. Well, many of the old techniques have been tried with them and have been mostly unsuccessful, but we have succeeded to a great extent. We can almost guarantee some results with our methods."

The methods include group counselling with parents, individual consultation and occasional home visits.

One youngster helped was Ralph, 10, who seemed reasonably intelligent. Ralph had not yet learned to speak at the time work with him began last December.

The project staff began by tackling one of his lesser problems—his refusal to sit at the table at meal time. Said one staff member, "He would just cruise around the dining room, pausing a moment now and then to grab a bite."

The research team's strategy—carried out by the parents—was to start by rewarding the boy with a small piece of candy if he would sit at the table for even two or three seconds. Gradually, the time span was increased so that he would have to remain longer and longer to get his reward.

The tactic was reinforced by the practice of removing the boy's plate and turning his chair around the first time he left the table, to let him know that he could not return for more food.

By the end of six weeks, Ralph was able to sit at the table for as long as 20 minutes at a time.

Possibility of Talking

Meanwhile, the candy bits had been replaced by tokens, which he could redeem for goodies later in the day. At the same time, the parents regularly spoke some words of praise, such as "good boy," any time they presented a reward—the hope being that he would gradually come to associate parental approval with the tangible reward and perhaps learn eventually to settle for the praise alone.

Now that Ralph is familiar with the system, efforts will be made, using similar techniques, to train him in making the sounds of speech.

Two quite different approaches are being evaluated in the Parent Project.

One is the so-called learning method, used with Ralph. The idea is that abnormal behavior in a child results when he has learned what society regards as wrong ways of doing things. Improvement, then, is brought about by training him to make more socially acceptable responses. Dr. Walder supervises this aspect of the project.

Analysis Also Used

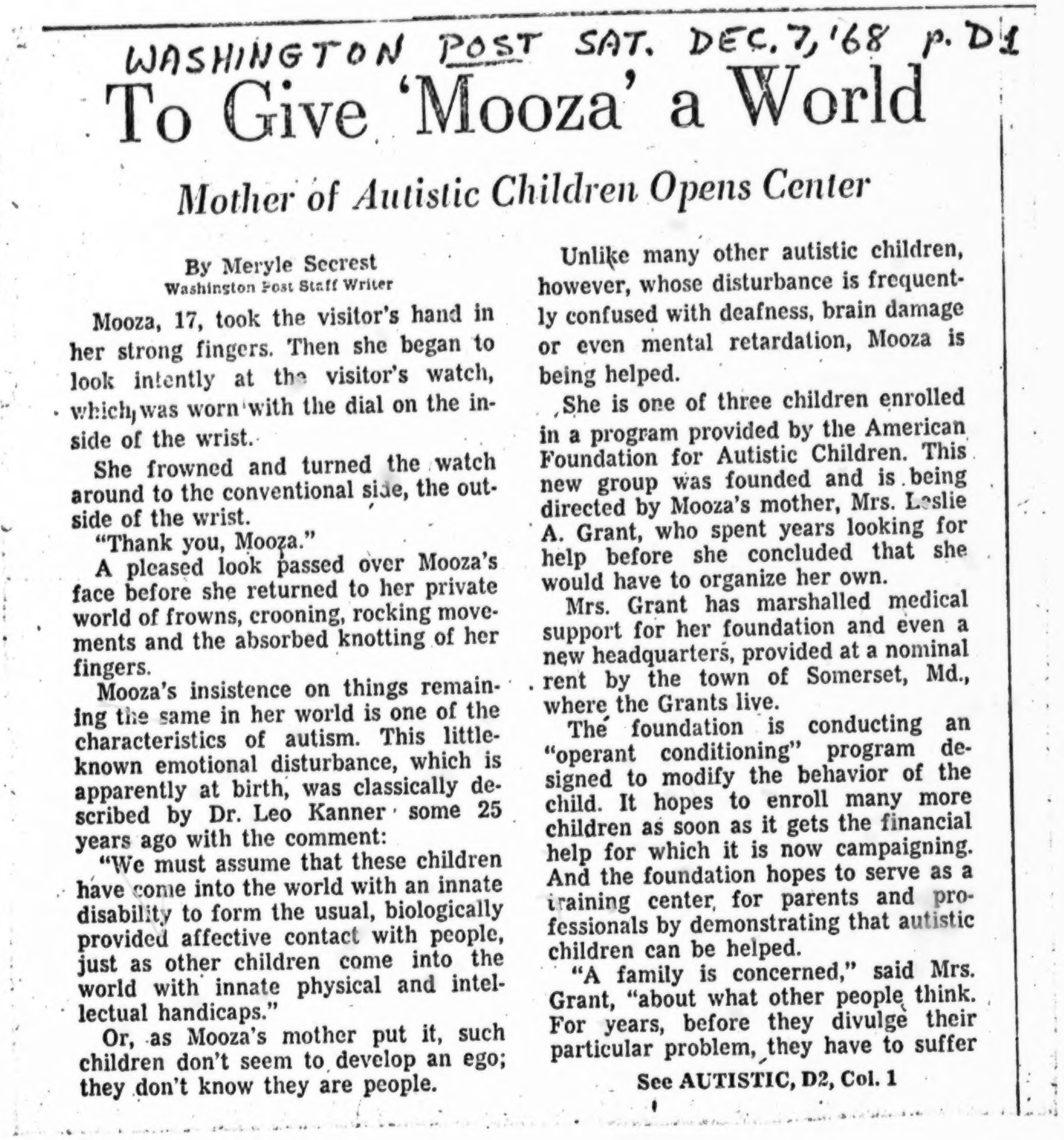
The second approach emphasizes traditional therapy, such as Freudian psychoanalysis and depth psychology. Prof. Paul G. Daston, a clinical psychologist, directs this part of the program.

How the two methods differ can be shown in an actual case of a 3½-year-old boy who had not yet begun to learn to talk. He had no need to, having learned to communicate with his mother through an elaborate system of grunts and gestures.

The learning approach probably would be to have the mother start ignoring the boy's code, so that he would have to begin using standard speech to obtain satisfaction of his needs.

The case actually was handled by one of Daston's associates, who achieved a comparable result by bringing the mother to realize that she had certain unconscious motives for wanting to keep the child at an infantile level.

An assessment of the two approaches probably will be made when the project concludes next year.



WASHINGTON POST SAT. DEC. 7, '68 p. D1

To Give 'Mooza' a World

Mother of Autistic Children Opens Center

By Meryle Secrest
Washington Post Staff Writer

Mooza, 17, took the visitor's hand in her strong fingers. Then she began to look intently at the visitor's watch, which was worn with the dial on the inside of the wrist.

She frowned and turned the watch around to the conventional side, the outside of the wrist.

"Thank you, Mooza."

A pleased look passed over Mooza's face before she returned to her private world of frowns, crooning, rocking movements and the absorbed knotting of her fingers.

Mooza's insistence on things remaining the same in her world is one of the characteristics of autism. This little-known emotional disturbance, which is apparently at birth, was classically described by Dr. Leo Kanner some 25 years ago with the comment:

"We must assume that these children have come into the world with an innate disability to form the usual, biologically provided affective contact with people, just as other children come into the world with innate physical and intellectual handicaps."

Or, as Mooza's mother put it, such children don't seem to develop an ego; they don't know they are people.

Unlike many other autistic children, however, whose disturbance is frequently confused with deafness, brain damage or even mental retardation, Mooza is being helped.

She is one of three children enrolled in a program provided by the American Foundation for Autistic Children. This new group was founded and is being directed by Mooza's mother, Mrs. Leslie A. Grant, who spent years looking for help before she concluded that she would have to organize her own.

Mrs. Grant has marshalled medical support for her foundation and even a new headquarters, provided at a nominal rent by the town of Somerset, Md., where the Grants live.

The foundation is conducting an "operant conditioning" program designed to modify the behavior of the child. It hopes to enroll many more children as soon as it gets the financial help for which it is now campaigning. And the foundation hopes to serve as a training center for parents and professionals by demonstrating that autistic children can be helped.

"A family is concerned," said Mrs. Grant, "about what other people think. For years, before they divulge their particular problem, they have to suffer

See AUTISTIC, D2, Col. 1

Instructor Dave Williams and Mrs. Grant help Mooza Grant write sentences and set clock hands.

Photos by Margaret Thomas—The Washington Post

AUTISTIC, From D1

it alone. Yes, this is what happened to us."

The Grants' second daughter, Lynda, 14, is also autistic.

"When they discover they have a disturbed child, parents can do one of two things: resign the child to an institution and sit around wondering how the child is doing, or keep the child home and try to do something to help the child."

Mrs. Grant chose the second solution and the consequences. These included a long and frustrating round of clinics and psychiatrists.

The Menninger Clinic told her to go back to Washington and set up a school.

"I thought he was joking."

"The problems," says Mrs. Grant, "can be endless. Imagine driving in a car and the child won't allow you to back the car up, because in his mind it can only go forward, and so you have to drive around the block to avoid a scene.

"Or you are driving in the car and the child doesn't respond to anything you say and do, and you get where you are going and say, 'Johnny, time to get out,' and he goes on sitting there. And you have to take him by the hand and walk him out; he doesn't respond; he's just not with you.

"Or he finally says something. 'Johnny wants a car ride,' and you are very thrilled that he's finally talking. So you take him for a ride in the car. But all he does is to go on repeating, 'Johnny wants a car ride,' until you think you'll go mad. That's called echolalia, because the autistic child goes on repeating the same phrase meaninglessly.

"All these things are characteristic of the autistic child."

Perhaps the biggest problem for the Grants was the behavior of Lynda, who had the infant's habit of head banging carried to excess. She banged her head repeatedly against walls; she fell everywhere; she even hit herself. In desperation, they devised an elaborate foam-padded uniform and bought her a crash helmet.

"By this time we were desperate. I was holding one and watching the other and I literally sat here and bawled. I kept thinking how stupid it all was, trying to hold on to these children and wondering how I could use my energies in a more fruitful way."

So Mrs. Grant approached Charles Horsky, who was then White House adviser on District affairs, with her idea to start a fund drive for research on autism.

He referred her to Dr. Stafford Warren, the Kennedy family adviser on mental retardation.

Almost in passing, she mentioned her youngest child and Dr. Warren immediately made arrangements to get Lynda into a hospital for three months of drug therapy. The therapy finally stopped her self-destructive behavior.

Then Mrs. Grant served a two-year term on the President's Committee on Mental Retardation as TV and radio chairman.

"Through this program . . . I learned a great deal about autism. I also learned we did practically nothing for austic children."

Dr. Robert E. Cooke, director of pediatrics at Johns Hopkins Hospital in Baltimore, offered to help her establish a privately funded center to train autistic children and to study their problems.